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Investigation of the Measurment Invairance of the Social Media Addiction Scale

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Investigation of the Measurement Invariance of the Social Media Addiction Scale

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Abstract

This study aims to examine the measurement invariance of the Social Media Addiction Scale (SMAS) in terms of gender, time spent on social media accounts, and the number of social media accounts. Invariance analyses conducted within the scope of the research were carried out on 672 participants. Measurement invariance studies were examined separately for all measurement models presented in SMAS and for each sub-factor in the scale. As a result of the analyses, it was revealed that the psychometric properties obtained from the measurement model may show bias according to the relevant subgroups for the SMAS in cases where the model fits up to the configural and metric stages. A comparison of the scores obtained from this measurement tool can be made, but careful interpretation should be made, keeping in mind that the items may behave biasedly according to gender on an item basis. For the SMAS, it has been demonstrated that in cases where the model fits up to the configural, metric, and scalar invariance stages, comparisons of the psychometric properties obtained from the measurement model can be made without bias according to the relevant subgroups. In addition, in cases where scalar invariance is met, the scores obtained from the measurement tool can be compared, and comments can be made on an item basis according to the relevant subgroups. Finally, it could be stated that any comparison made according to the subgroups tested using the SMAS would be meaningless in cases where even configural invariance is not accepted.

Keywords: Measurement Invariance, Social Media Addiction Scale, Multiple Group Confirmatory Factor Analysis, Structural Equation Model (SEM)

Introduction

Interpersonal communication is the key to meeting humans' basic needs, such as belonging and establishing relationships. Interpersonal ways of communication have considerably changed along with the development of information technology in recent years, especially with the spread of internet-based social media networks (Facebook, Instagram, Twitter, etc.). Smith & Anderson, 2018; Hou, Xiong, Jiang, Song, & Wang, 2019). Being easily accessible and being able to access social media accounts from anywhere at any time brings about social media addiction, i.e., its excessive utilization affects and hinders other aspects of daily life (Griffiths, 2000). Before defining social media addiction, the concept of addiction needs to be explained. Addiction is defined as an individual's inability to survive without any object or action and to have control over it (TBM, 2015). Although social media addiction is not defined as a type of addiction in the DSM-V diagnostic criteria, it is considered one of the behavior-based addictions in the literature (Griffiths & Szabo, 2014; Kuss & Griffiths, 2011).

When one mentions addiction, chemical substances such as alcohol, cigarettes, and drugs come to mind first (Çakır, Horzum, & Ayas, 2013). In recent years, there have been behaviors that could be considered addictions in habits such as eating, shopping, the internet, mobile phones, and social media. Besides the substances that are physically taken into the body, there are also behavioral-based addictions (sex, internet, eating, games, television, etc.). Kim & Kim, 2002). Sussman (2012) identified 16 types of addiction based on substances taken into the body and behaviors (technology, gambling, drugs, internet, video games, shopping, eating, etc.) in his study. Research on social media addiction, which could be considered one of the behavior-based addictions, has been increasing in recent years (Özdemir, 2019; Çömlekçi & Başol 2019; Dijital, 2022a; Dijital, 2022b; Turel & Serenko, 2012; Şahin & Yağcı 2017).

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According to the Digital (2022a) Global World Report, social media users have increased by more than 10 percent in the last 12 months, with 424 million new users starting to use social media in 2021. However, according to the Digital (2022b) Turkey Report, there were 68.9 million social media users in Turkey in January 2022. At the beginning of 2022, the number of social media users in Turkey equaled 80.8 percent of the total population. It has been determined that the number of social media users in Turkey has grown by 8.9 million (14.8%) between 2021 and 2022. In addition, considering the daily rate of social media utilization at a global level, with two hours and 27 minutes a day, social media constitutes the largest share of internet utilization with a total of 35 percent. Time spent on social media has also increased by 1.4% per day compared to last year. As seen in the Digital Report (2022a), social media are the most used platforms in internet utilization. When the literature is examined, many studies have been conducted on social media utilization durations (Duman, 2022; Tutgun Ünal, 2015; Ehrenberg, Juckes, White, & Walsh, 2008; Karaiskos, Tzvellas, Balta, & Paparrigopoulos, 2010; Folaranmi, 2013) and the relationships between gender and social media addiction (Bayram Saptır, 2022; Turel Serenko, 2012; Wu, 2013; Tutgun Ünal, 2015; Göksu, 2019). However, few studies have examined the relationship between the number of social media applications and social media addiction (Tutgun Ünal, 2015). Marengo, Fabris Longobardi, and Settanni (2022) examined the relationship between the number of social media applications during the COVID-19 process, gender, time spent on social media, and social media addiction in their study and found that adolescents with more than one social media account (TikTok, WhatsApp, and YouTube) were more addicted. Therefore, conducting research on many sub-groups such as social media addiction, time spent on social media, the number of social media accounts (applications), gender, and education level gains significance.

In light of all this literature, the widespread use of social media and individuals' showing of addiction-like behaviors over time make it imperative to measure the concept of social media addiction and different subgroups (gender, number of applications (accounts), duration of use, purpose of use, etc.). Therefore, it is of primary importance to conduct measurement invariance studies of measurement tools used to measure social media addiction to obtain more reliable scientific results.

The measures obtained through the measurement may differ due to individual characteristics as well as the measurement tool (Vandenberg & Lance, 2000). Therefore, it is important to conduct measurement invariance studies in different subgroups (gender, socio-economic status, ethnicity, etc.) to comprehensively reveal the psychometric properties of the measurement tools developed to measure the characteristics subject to measurement. When deciding whether it can be accepted that the structure of a psychological variable functions in the same way between different sexes, countries, or cultures, the measurement invariance of the measurement tool developed to measure that psychological variable should be ensured. Here, it is assumed that a developed scale measures the same characteristic in all groups. However, the accuracy of comparisons and analyses made under this assumption is meaningful. As it is known, this characteristic is tried to be defined and discerned by comparing the averages in different subgroups with the scales developed to measure psychological variables. Unfortunately, definitions of structure in subgroups where measurement invariance has not been studied are a wasted effort.

Measurement invariance has gained significance with increasing momentum in recent years, especially in studies involving multi-group comparisons (Byrne, 2003). Although measurement invariance studies are significant in terms of multi-group comparisons, they are also critical in revealing the characteristic under measurement from a cultural perspective. In measurement invariance, the main thing is whether the measured construct has similar scope in different subgroups and whether it is interpreted in the same way.

After the definition of social media addiction as a behavior-based addiction (Griffiths & Szabo, 2014; Kuss & Griffiths, 2011; Sussman, 2012), different studies have been conducted abroad (Al-Menayes, 2015; Andreassen, Torsheim, Brunborg, & Pallesen, 2012; Liu & Ma, 2020; Stanculescu, 2022) and in our country on measuring social media addiction, and different measurement tools have been developed (Tutgun-Ünal & Deniz, 2015; Şahin & Yağcı, 2017; Taş, 2017; Şahin, 2018; Bakır Aygar & Uzun, 2018; Özgenel, Canpolat, & Ekşi,2019; Demirci, 2019). This research aimed to examine the "Social Media Addiction Scale" developed by Bakır Aygar and Uzun (2018) in terms of measurement invariance. This is because the measurement tool has sub-dimensions (control difficulty, deprivation, social isolation, and functional deterioration) that include the DSM-V diagnostic criteria. Therefore, for studies planned to measure social media addiction, conducting a measurement invariance study of this measurement tool before making comparisons in different groups is considered substantial in terms of making correct interpretations of the decisions taken regarding the comparisons in subgroups.

The absence of a measurement invariance study of social media addiction based on gender, time spent on social media, and the number of owned social media accounts, both in Turkey and abroad, makes this study significant. This study aimed to examine the decisions taken regarding the measurement invariance of the SMAS in terms of gender, time spent on social media accounts, and the number of social media accounts.

Method

2.1. Participants

This study included 690 participants. After examining the assumptions based on the analysis used within the scope of the study, the analyses were carried out with the remaining 672 observations. The distribution of 672 participants whose invariance analyses were conducted in this study is provided in Table 1.

Table 1. Demographic information of participants

Gender	Time spent on social media	Number of social media accounts
Female (358)	Less than 1 hour (81)	0–1 (8–76)
	1–2 hours (246)	2 (186)
Male (314)	2–4 hours (298)	3 (223)
	More than 4 hours (47)	4 and above (179)

2.2. Data Collection Tool

This study employed the SMAS developed by Bakır Aygar and Uzun (2018). The measurement tool consists of 26 items and three factors on a 5-point Likert-type scale. As a result of the exploratory factor analysis, of the three factors, "Functional Deterioration" alone accounted for 42.626% of the common variance, "control difficulty and Deprivation" alone accounted for 9.517% of the common variance, and "Social Isolation" alone accounted for 5.608% of the common variance. The factor loadings of the measurement tool ranged between .493 and .792. For criterion-related validity, the correlation between the SMAS and the problematic internet use scale was 0.75. The Cronbach internal consistency coefficient was $\alpha = .95$ for the scale, $\alpha = .92$ for the control difficulty and deprivation sub-dimension, $\alpha = .91$ for the functional deterioration, and $\alpha = .81$ for the social isolation.

The validity and reliability findings obtained within the scope of the study related to the SMAS used in the research are detailed in Table 2. Cronbach's alpha (CA) and composite reliability (CR) values of latent variables in the scale were addressed together for the reliability of the results obtained from the multi-group confirmatory factor analysis under measurement invariance. According to the literature (Hair, Black, Babin, & Anderson, 2010), calculating the construct reliability (CR) value besides Cronbach's Alpha coefficient is stated to be important in Structural Equation Modeling (SEM) and Confirmatory Factor Analysis (CFA). Under the validity findings, divergent and convergent validity evidence were obtained based on measurement models. In order to test convergent and divergent validity, Average Variance Extracted (AVE), Composite Reliability (CR), Maximum Squared Variance (MSV), and Average Shared Square Variance (ASV) coefficients were used. The Average Variation Extracted (AVE) values were examined to check whether convergent validity was satisfied. In order to ensure convergent validity, the condition of $CR \geq AVE \geq 0.50$ must be met (Fornell & Larcker, 1981). Divergent validity implies that statements regarding variables should be less correlated with factors other than the ones they represent (Yaşlıoğlu, 2017). As such, Maximum Square Variance (MSV) and Average Shared Square Variance (ASV) coefficient values were calculated to ensure divergent validity. In order to speak of the presence of divergent validity, the results should be MSV<AVE and ASV<MSV.

Table 2. Validity and reliability findings of the social media addiction scale

Sub-Dimensions	CA	CR	AVE	MSV	ASV
Control difficulty: deprivation	0.90	0.91	0.67	0.59	0.42
Functional Deterioration	0.89	0.89	0.67		
Social Isolation	0.81	0.82	0.72		

Considering the reliability values given in Table 2, the CA reliability coefficients for the sub-dimensions used in the study were 0.90, 0.89, and 0.81, respectively. According to these findings, the measurement tool used provided reliable measurements for the research participants. It was concluded that the CR values calculated within the scope of CFA satisfy the specified criteria. The CR values obtained within the scope of the study were 0.91, 0.89, and 0.82 for the control difficulty, functional deterioration, and social isolation sub-factors, respectively, and all these values were greater than the AVE values related to the relevant sub-dimensions. The AVE values were above 0.5 in all sub-factors, indicating that the items under the factor adequately represent the relevant latent variable and that convergent validity evidence has been obtained. Considering the resultant MSV, ASV, and AVE values, the MSV≤AVE and ASV≤MSV conditions have been met. In light of this information, the results obtained from the measurement tool used in the study may reveal valid and reliable results.

A confirmatory factor analysis was performed to provide additional evidence for construct validity using data from 672 observations. According to the CFA results, $\chi^2/df = 5.99$, RMSEA = 0.09, CFI = 0.96, NNFI (TLI) =

0.95, and SRMR = 0.062. As a result of the evaluations made based on multiple perspectives, it was concluded that the model-data fit of the measurement model was met at an acceptable level.

2.3. Data Analysis Techniques

Measurement invariance can be tested under item-response theory (IRT) or SEM. Some researchers conduct studies combining the two approaches (Reise, Widaman, & Pugh, 1993; Stark, Chernyshenko, & Drasgow, 2006; Widaman & Grimm, 2014). As SEM is used more widely than IRT, the analyses were performed based on SEM using CFA. The measurement invariance study performed in this study was based on the Multi-Group Confirmatory Factor Analysis (MGCFA) approach, where the equivalence of covariance structures was tested (Dimitrov 2010; Başusta 2010). MGCFA is a frequently used method in group comparisons where there is more than one group and ensures that the group parameters are equal and the latent factor averages are compared. The analyses conducted based on the means of latent factors are a more sensitive technique in MGCFA than traditional mean comparisons and reveal the differences in different subgroups more accurately (Thompson, 2004). Measurement invariance studies are conducted in a hierarchical structure with increased limitations. These studies require comparing the most basic level of structural invariance with the more restrictive models by developing hypotheses and testing them stepwise (Wu, Li, & Zumbo, 2007; Steenkamp & Baumgartner, 1998). Four types of invariance are taken into account in multi-group analyses (Byrne, 1998; Steenkamp & Baumgartner, 1998; Dimitrov, 2010). This study was conducted by testing four different hypotheses, namely configurational, Metric, Scalar, and Strict invariance. The data analyses were carried out using the Lisrel 8.7 program.

In decision studies concerning measurement invariance, the difference values between the comparative fit index (CFI) values have been used instead of the chi-square statistics, which produce more erroneous results because of the sample size-induced statistical weaknesses in evaluating the goodness-of-fit (Wu et al., 2007; Brown, 2006; Cheung & Rensvold, 2002). The ΔCFI fit index is preferred because the fit coefficients are more convenient to explain the relationship between latent and observed scores (Wu et al., 2007). The differences between the CFI values for the invariance stages examined hierarchically were examined under the "0.01>ΔCFI>0.01" condition, deciding whether the invariance conditions were satisfied. In addition, the model data goodness-of-fit criteria obtained at the decision stage regarding configural invariance were compared with the goodness-of-fit criteria presented in Table 2. At this stage, when at least three presented goodness-of-fit measures satisfied the conditions, the decision was made based on multiple perspectives that the configural invariance condition was satisfied.

Invariance studies were separately examined for all measurement models presented in SMAS and for each sub-factor in the scale. After the invariance study for the whole model, the decisions to be taken based on the sub-factors would be more appropriate when the convergent and divergent validity findings calculated based on the data used in the study are evaluated. In addition, since it is expected that considering these relatively independent factors under different subgroups may produce more valid and detailed results, the resultant findings were explained in detail in terms of measurement invariance.

To ensure the validity and reliability of study findings, various assumptions were tested, considering that the study employed multivariate analyses. The data were collected through the Google form within the scope of the study. Therefore, the missing data issue, considered a problem in the analysis by the researchers, was not found. In outlier analyses, Z values were calculated for univariate extreme values, and the results indicated that these values did not vary between -3.46 and 3.41 and that there was no univariate extreme value. When the Mahalanobis distance values calculated for multivariate extreme values were examined, 18 observations yielded values greater than $X^2_{26, .001} = 54.05$, and were excluded from the analysis. Considering the size of the dataset, 672 observations are large enough for this SEM-based study (Kline, 1998). The multicollinearity problem is another assumption in multivariate statistics. In order to determine whether this condition was met, the Durbin-Watson statistic, VIF, and Tolerance values were examined. Since the Durbin-Watson statistic obtained within the scope of the dataset was 1.95, it can be stated that the errors are independent. As such, since the VIF values ranged from 3.196 to 1.183 and the tolerance values ranged from 0.313 to 0.846, it was concluded that there was no multicollinearity problem. CFA results for SMAS were also reported separately for both the whole model and subscales before proceeding to the invariance tests. When evaluating the goodness-of-fit of the measurement models used in the study, the fit indices, considered stronger against statistical weaknesses and more appropriate to be used in large samples, were used. CFI, NNFI, RMSEA, and SRMR values were taken into account instead of the GFI value affected by the sample size. (Cheung & Rensvold, 2002; Wu et al., 2007). Some fit indices used in CFA analyses and their acceptable cut-off values are presented in Table 3.

Table 3. Perfect and Acceptable Fit Criteria for Fit Indices Used in CFA Studies

Fit Indices	Perfect Fit Criteria	Acceptable Fit Criteria
[1]$\chi2/df$	$0 \leq \chi2/df \leq 3$	$3 \leq \chi2/df \leq 5$
[2]CFI	$.95 \leq CFI \leq 1.00$	$.90 \leq CFI \leq .95$
[2]NNFI (TLI)	$.95 \leq NNFI (TLI) \leq 1.00$	$.90 \leq NNFI (TLI) \leq .95$
[3-4]RMSEA	$.00 \leq RMSEA \leq .05$	$.05 \leq RMSEA \leq .10$
[3]SRMR	$.00 \leq SRMR \leq .05$	$.05 \leq SRMR \leq .10$

[1](Kline, 1998), [2] (Baumgartner & Homburg, 1994; Bentler & Bonett, 1980; Marsh, Hau, Artelt, Baumert, & Peschar, 2006), [3](Browne & Cudeck, 1992), [4](Byrne, 1998)

Results and Discussion

Statistics relating to the CFA analyses conducted in terms of the whole measurement scale structure and all sub-factors used in the study are presented in Table 4.

Table 4. Statistics relating to the CFA analyses

	χ^2	*Df*	χ^2/df	RMSEA	SRMR	NNFI	CFI	Decision
Whole Scale Model	1354.22	296	4,57	0.087	0.062	0.95	0.96	Acceptable fit
Functional deterioration	197.34	35	5,63	0.10	0.047	0.96	0.97	Acceptable fit
Control difficulty and deprivation	602.79	54	11,16	0.15	0.066	0.91	0.92	Acceptable fit
Social isolation	2.59	2	1,29	0.022	0.011	1.00	1.00	Perfect fit

According to the results of Table 4, some conflicts may influence the decisions in the CFA fit indices obtained for measurement models from various aspects, except for the whole model and social isolation. In particular, the $\chi2/df$ yielded values greater than the acceptable criterion values, and the values obtained for RMSEA either overlapped or exceeded the acceptable fit index limits, challenging the researchers at the decision stage. Therefore, decisions were made based on SRMR, another error value, and $\chi2/df$ value was ignored in evaluating model-data fit since it is a sampling-based statistic (Muthen, 2001).

Due to this contradiction in the RMSEA, the model data fit was performed based on the SRMR value to be able to continue with the stages and perform detailed analysis in cases where the model and the configural invariance were satisfied and when the RMSEA yielded values greater than the criterion value. As seen in Table 5, the measurement invariance hypotheses were tested progressively in subgroups of gender, time spent on social media, and number of social media, respectively.

Table 5. Measurement Invariance Results for different subgroups based on the Whole Measurement Model

				χ^2	*df*	RMSEA	SRMR	NNFI	CFI	ΔCFI	Decision
Whole Measurement Model	**Gender**		Model A	2702.15	595	0.10	0.080	0.93	0.94	-	ACCEPT
			Model B (Metric)	2778.88	621	0.10	0.091	0.94	0.94	0.00	ACCEPT
			Model C (Scalar)	3386.72	670	0.11	0.13	0.93	0.92	0.02	REJECT
			Model D (Strict)	3518.26	696	0.11	0.13	0.93	0.92	0.02	REJECT
	Time Spent on Social Media		**Model A**	**3563.09**	**1193**	**0.11**	**0.13**	**0.86**	**0.87**	X	REJECT
			Model B (Metric)	3712.16	1271	0.11	0.22	0.86	0.87	X	REJECT
			Model C (Scalar)	4810.32	1372	0.12	0.36	0.83	0.82	X	REJECT
			Model D (Strict)	52325.49	1450	0.13	0.45	0.82	0.80	X	REJECT
	Number of Social Media Accounts		Model A	3696.77	1193	0,11	0.091	0.90	0,91	-	ACCEPT
			Model B (Metric)	3900.33	1271	0.11	0.12	0.90	0.91	0.00	ACCEPT
			Model C (Scalar)	4636.03	1372	0.12	0.14	0.89	0.90	0.01	ACCEPT
			Model D (Katı)	5048.50	1450	0.12	0.16	0.89	0.88	0.03	REJECT

Configural and metric invariance conditions were satisfied in subgroups examined according to gender in Table 5, but scalar and strict invariance were not within acceptable limits, and the hypothesis that the regression constants and error variances were the same in gender subgroups was rejected for these stages, respectively. Measurement invariance stages based on time intervals spent on social media did not pass the invariance test, and metric, scalar, and strict invariance conditions were not met for this subgroup. This finding indicates that making comparisons based on time spent on social media through SMAS may not produce valid findings. The

suggested construct of the scale differs based on the time individuals spend on social media. Since this scale is different in terms of construct in these subgroups, limiting factor loadings, constants, and error variances may not make any sense.

When the measurement invariance stages were performed based on the number of social media accounts, the whole measurement model met all stages up to the strict invariance stage, where the error variances were fixed. According to this finding, it was concluded that the factor structure, factor loadings, and regression constant of SMAS were invariant, whereas the error variances were different in the number of social media account subgroups.

Table 6. Measurement invariance results obtained for different subgroups based on sub-factors

				$\chi2$	df	RMSEA	SRMR	NNFI	CFI	ΔCFI	Decision
Gender	Functional and deterioration	Model	A	443.40	70	0.13	0.060	0.94	0.95	-	ACCEPT
		Model B (Metric)		432.4	80	0.12	0.094	0.94	0.95	0.00	ACCEPT
		Model C (Scalar)		584.58	99	0.12	0.12	0.93	0.94	0.01	ACCEPT
		Model D (Strict)		649.8	109	0.12	0.12	0.91	0.92	0.03	REJECT
	Control difficulty and deprivation	Model	A	844.42	108	0.15	0.076	0.91	0.92	-	ACCEPT
		Model B (Metric)		861.77	120	0.14	0.12	0.91	0.92	0.00	ACCEPT
		Model C (Scalar)		1140.04	143	0.15	0.15	0.88	0.90	0.02	REJECT
		Model D (Strict)		1173.40	155	0.15	0.15	0.88	0.89	0.03	REJECT
	Social isolation	Model	A	5.03	4	0.029	0.018	1.00	1.00	-	ACCEPT
		Model B (Metric)		15.44	8	0.055	0.076	0.99	0.99	0.01	ACCEPT
		Model C (Scalar)		130.44	15	0.16	0.19	0.91	0.89	0.11	REJECT
		Model D (Katı)		170.34	19	0.16	0.17	0.85	0.86	0.14	REJECT
Time spent on social media	Functional deterioration	Model	A	537.04	140	0.13	0.080	0.88	0.91	-	ACCEPT
		Model B (Metric)		624.72	170	0.13	0.37	0.89	0.90	0.01	ACCEPT
		Model C (Scalar)		851.28	209	0.14	0.44	0.87	0.85	0.06	REJECT
		Model D (Strict)		1085.00	239	0.15	0.58	0.84	0.79	0.11	REJECT
	Control difficulty and deprivation	Model	A	1226.34	216	0.17	0.10	0.79	0.83	X	REJECT
		Model B (Metric)		1292.86	252	0.16	0.18	0.81	0.82	X	REJECT
		Model C (Scalar)		2050.76	299	0.19	0.45	0.73	0.70	X	REJECT
		Model D (Strict)		2213.13	335	0.18	0.54	0.714	0.67	X	REJECT
	Social isolation	Model	A	10.33	8	0.042	0.062	0.99	1.00	-	ACCEPT
		Model B (Metric)		31.42	20	0.058	0.086	0.99	0.99	0.01	ACCEPT
		Model C (Scalar)		214.12	35	0.18	0.14	0.89	0.80	0.20	REJECT
		Model D (Strict)		265.41	47	0.17	0.27	0.89	0.78	0.22	REJECT
Number of social media accounts	Functional deterioration	Model	A	568.65	140	0.14	0.065	0.91	0.93	-	ACCEPT
		Model B (Metric)		639.11	170	0.13	0.14	0.92	0.92	0.01	ACCEPT
		Model C (Scalar)		817.38	209	0.13	0.12	0.91	0.90	0.03	REJECT
		Model D (Strict)		957.50	239	0.13	0.16	0.90	0.87	0.06	REJECT
	Control difficulty and deprivation	Model	A	1272.73	216	0.17	0.12	0.85	0.88	X	REJECT
		Model B (Metric)		1414.81	252	0.17	0.13	0.84	0.87	X	REJECT
		Model C (Scalar)		1791.98	299	0.17	0.17	0.84	0.82	X	REJECT
		Model D (Strict)		2029.74	335	0,17	0.20	0.85	0.81	X	REJECT
	Social isolation	Model	A	11.88	8	0.054	0.032	0.99	1.00	-	ACCEPT
		Model B (Metric)		27.03	20	0.046	0.10	0.99	0.99	0.01	ACCEPT
		Model C (Scalar)		165.80	35	0.15	0.15	0.92	0.88	0.12	REJECT
		Model D (Strict)		182.66	47	0.13	0.17	0.93	0.87	0.13	REJECT

Configural and metric invariances were satisfied for the "control difficulty and deprivation" and "functional deterioration" sub-factors in the scale considering the gender subgroup in Table 6, whereas the constant obtained in the regression equation was different for groups as the scalar invariance condition was 0.01>ΔCFI, whereby

the scalar invariance condition was rejected. In other words, the factorial construct measured was similar in subgroups. It was concluded that the items constituting the construct had similar factor loadings in subgroups. However, the relationship between the observed variables and the latent construct was not similar in terms of gender. The scores of individuals with the same latent construct score regarding the observed construct differed by gender group. For the "social isolation" sub-factor, scalar invariance was satisfied, along with configural and metric invariance. Therefore, it could be stated that the constant in the regression equations created for the social isolation sub-dimension items is equal or invariant between the groups. In other words, there are no item-based biases for gender based on the data obtained from the social isolation sub-dimension.

As seen in Table 6, in subgroups examined according to the time spent on social media, the configural and metric invariances were achieved for the "functional deterioration" and "social isolation" sub-dimensions, but the scalar and strict invariances were not within acceptable limits. Therefore, the hypotheses that regression constants and error variances are the same for time spent on social media subgroups were rejected for these stages, respectively. The measurement invariance stages performed for the "functional deterioration" sub-dimension did not pass the invariance test based on time intervals spent on social media, where metric, scalar, and strict invariance conditions were not met for this sub-group. This finding indicates that making comparisons through SMAS based on time spent on social media may not yield valid findings. The suggested construct of the scale differs based on the time individuals spend on social media. Since this scale is different in terms of construct in these subgroups, it could be interpreted that limiting factor loadings, constants, and error variances will not make any sense.

In subgroups examined according to the number of social media accounts, the configural and metric invariances were achieved for the "functional deterioration" and "social isolation" sub-dimensions, but the scalar and strict invariances were not within acceptable limits, and thereby the hypotheses that regression constants and error variances are the same in the number of social media accounts subgroups were rejected for these stages, respectively. This finding is the same as the results obtained in the subgroups examined according to the time spent on social media. The measurement invariance stages performed for the "functional deterioration" sub-dimension did not pass the invariance test based on the number of social media accounts, and metric, scalar, and strict invariance conditions were not achieved for this sub-group. This finding indicates that making comparisons through SMAS based on the number of social media accounts may not yield valid findings. The structure of the scale presented differs based on the number of social media accounts individuals have. Since this scale is different in terms of construct in these subgroups, limiting factor loadings, constants, and error variances may not make sense.

Conclusion

The decisions for invariance stages, carried out based on both the whole model and the sub-factors, are summarized in Table 7.

Table 7. Comparative decisions for invariance stages

Factor	Invariance Hypotheses	Gender	Time Spent on Social Media	Number of Social Media Accounts
Whole Model	Configural	ACCEPT	REJECT	ACCEPT
	Metric Invariance	ACCEPT	REJECT	ACCEPT
	Scalar Invariance	REJECT	REJECT	ACCEPT
	Strict Invariance	REJECT	REJECT	REJECT
Functional Deterioration	Configural	ACCEPT	ACCEPT	ACCEPT
	Metric Invariance	ACCEPT	ACCEPT	ACCEPT
	Scalar Invariance	ACCEPT	REJECT	REJECT
	Strict Invariance	REJECT	REJECT	REJECT
Control Difficulty and Deprivation	Configural	ACCEPT	REJECT	REJECT
	Metric Invariance	ACCEPT	REJECT	REJECT
	Scalar Invariance	REJECT	REJECT	REJECT
	Strict Invariance	REJECT	REJECT	REJECT
Social Isolation	Configural	ACCEPT	ACCEPT	ACCEPT
	Metric Invariance	ACCEPT	ACCEPT	ACCEPT
	Scalar Invariance	REJECT	REJECT	REJECT
	Strict Invariance	REJECT	REJECT	REJECT

As seen in Table 7, considering gender subgroups, the configural invariance was primarily achieved for the whole scale as well as for the control difficulty, deprivation, and social isolation sub-dimensions. This finding could be interpreted as indicating that the construct is invariant according to gender. In other words, the latent variables were similar in males and females, and both groups had the same conceptual perspectives when answering the scale questions (Vandenberg & Lance, 1998). In addition, metric invariance was also achieved. When metric invariance is achieved, comparing the scores obtained from the whole scale and two sub-dimensions based on gender would become meaningful (Byrne, 2003). In metric invariance, the hypothesis that the factor loadings or regression tendencies of the scale items are invariant among the mentioned groups is accepted. Therefore, when metric invariance is ensured, people from different groups may respond to the items in the same way when both the whole scale and its two sub-dimensions are considered. Table 7 shows that scalar and strict invariances are not achieved. Therefore, it could be argued that there may be item-based biases for gender based on the data obtained from the SMAS and its two sub-dimensions. However, when it comes to the functional deterioration sub-dimension of the scale in gender subgroups, the scalar invariance is met alongside the configural and metric invariances described above. Therefore, it could be stated that there would be no item-based biases for gender based on the data obtained from the functional deterioration sub-dimension of SMAS, and comparisons could be made on the basis of items. Although there is no research on the invariance of measurement tools on social media addiction in different subgroups in our country, invariance studies on different measurement tools related to social media addiction in different subgroups, such as gender and time, exist abroad. In their study, Yue, Zhang, Cheng, Liu, and Bao (2022) found that the "Bergen Social Media Addiction" scale satisfied measurement invariance according to gender up to the strict invariance stage. Considering that this is the first invariance study of the measurement tool used in our research, it was not possible to compare it with other studies. Therefore, future studies are needed to confirm and compare the findings. In a study conducted using the "Social Media Addiction Scale" employed in the study according to the demographic variables, Ganjayeva (2019) found no significant gender differences. However, considering that the items are biased in the research findings, the absence of gender differences in social media addiction should be interpreted more carefully. Considering that male and female subgroups have different perceptions of social media and that they have different utilization purposes, it could be seen as a possible reason why measurement invariance was not achieved.

Considering the subgroups of time spent on social media, the configural invariance was primarily achieved for both functional deterioration and social isolation sub-dimensions. This finding could be interpreted as meaning that the construct is invariant according to the time spent on social media; that is, the latent variables are similar in the relevant subgroups, and these subgroups have the same conceptual perspectives while responding to the scale questions (Vandenberg & Lance, 1998). In addition, metric invariance was also achieved in terms of time spent on social media in these sub-dimensions. When metric invariance is achieved, comparing the scores obtained from the two sub-dimensions based on the time spent on social media may become meaningful (Byrne, 2003). Further, when metric invariance is met, it is possible to say that people belonging to different groups respond to the items in the same way, considering the two sub-dimensions of the scale. Table 7 shows that scalar and strict invariance are not achieved according to the time spent on social media in any subgroup. Therefore, it could be stated that there may be item-based biases for the time spent on social media based on the data obtained from the SMAS and these two sub-dimensions. For the subgroups of time spent on social media, no invariance stage was achieved for both the whole scale and the control difficulty and deprivation sub-dimensions. Thus, the study concluded that it would not be meaningful to make comparisons for the subgroups of time spent on social media when it comes to both the whole scale and the control difficulty and deprivation sub-dimensions. Ganjayeva (2019) examined the relationship between social media addiction and time spent on social media and concluded that those who spend more than three hours on social media are more addicted than those who spend one hour. Considering the results of this measurement invariance study, it would be more appropriate to comment on the sub-dimensions when interpreting the time spent on social media.

Considering the number of social media account subgroups, the configural and metric invariances are primarily achieved for both the functional deterioration and social isolation sub-dimensions. This finding could be interpreted as meaning that the construct is invariant according to the number of social media accounts; that is, the latent variables are similar in relevant subgroups, and these subgroups have the same conceptual viewpoints while answering the scale questions (Vandenberg & Lance, 1998). In addition, it would be meaningful to compare the scores obtained from the two sub-dimensions based on the number of social media accounts (Byrne, 2003). It is seen that scalar invariance according to the number of social media accounts is achieved only when the whole measurement model is in question. Therefore, unbiased comparisons could be made for the number of social media accounts based on the data obtained from the SMAS and its sub-dimensions. Considering the control difficulty and deprivation subdimensions for the number of social media account subgroups, no invariance stage was met. Therefore, it was concluded that it would not be meaningful to make

comparisons for the number of social media accounts subgroups when the control difficulty and deprivation sub-dimensions are taken into account.

The study revealed that the psychometric properties obtained from the measurement model may show bias according to the relevant subgroups in cases where the model fits up to the configural and metric stages of the SMAS. The scores obtained from this measurement tool can be compared, but careful interpretation should be made, keeping in mind that the items may behave biasedly according to gender on an item basis. For the SMAS, the study revealed that in cases where the model fits up to the configural, metric, and scalar invariance stages, the psychometric properties obtained from the measurement model could be compared according to the relevant subgroups without bias. In addition, in cases where scalar invariance is met, the scores obtained from the measurement tool could be compared, and comments could be made on an item basis according to the relevant subgroups. Finally, any comparison made according to the subgroups tested using the SMAS would be meaningless in cases where even configural invariance is not accepted.

As in this study, there may be cases where the invariance of all items related to the measurement tool used cannot be achieved (Vandenberg & Lance, 2000; Cheung, 2007). When making comparisons using these scales, it is necessary to rearrange the items of the measurement tool and reanalyze the invariance according to the relevant group to eliminate the biases observed in these items. Despite all this, when it is observed that the bias persists for the items, it could be recommended to conduct a partial invariance study for the groups where the invariance is investigated. For future research, comparisons of the SMB scale can be made according to gender and the number of social media accounts, but interpretations should be made carefully as they will show bias on the basis of items. It can be said that it would not be appropriate to make a comparison according to the time spent on social media. In addition, variables such as social media usage purposes, age, and invariance studies can be suggested for future research.

Author (s) Contribution Rate

NBU and MA contributed equally to designing, conducting the research, and collecting the data. NBU and MA analyzed the data, and MA created the figures. NBU, MA, and BBA carried out the literature review and wrote and prepared the manuscript. NBU provided insight and edited the manuscript. MA and BBA contributed equally to the discussion and conclusion parts of the manuscript. All authors read and approved the final manuscript.

Conflicts of Interest

The authors declared no conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

References

Al-Menayes, J. J. (2015). Social media use, engagement and addiction as predictors of academic performance. *International Journal of Psychological Studies*, *7*(4), 86–94.

Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological reports*, *110*(2), 501–517.

Bakır Aygar, B., & Uzun, B. (2018). Sosyal Medya Bağımlılığı Ölçeği'nin geliştirilmesi: Geçerlik ve güvenirlik çalışmaları. *Addicta: The Turkish Journal on Addictions*. http://dx.doi.org/10.15805/addicta.2018.5.3.0046

Başusta, N. B. (2010). Ölçme eşdeğerliği. *Eğitimde ve Psikolojide Ölçme ve Değerlendirme Dergisi*, *1*(2), 58–64.

Baumgartner, H., & Homburg, C. (1996). Applications of structural equation modeling in marketing and consumer research: a review. *International Journal of Research in Marketing*, *13*(2), 139–161.

Bayram Saptır, A. (2022). *Sosyal medya bağımlılığı ve kendini sansürleme: bazı değişkenler açısından incelenmesi* (Unpublished master's thesis) Sakarya University, Institute of Educational Sciences, Sakarya.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*, 588–606.

Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York, NY: The Guilford Press.

Browne, M., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods and Research*, *21*, 230–258.

Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming*. New Jersey: Lawrence Erlbaum.

Byrne, B. M. (2003). The issue of measurement invariance revisited. *Journal of Cross-Cultural Psychology*, *34*(2), 155–175.

Çakır, Ö., Horzum, M. B., & Ayas, T. (2013). İnternet bağımlılığının tanımı ve tarihçesi. *İnternet Bağımlılığı: Sorunlar ve Çözümler* (pp. 1–16). *Ankara: Anı yayıncılık*.

Cheung, G. W. (2007). Testing equivalence in the structure, means, and variances of higher-order constructs with structural equation modeling. *Organizational Research Methods*, *11*(3), 593–613.

Cheung, G., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, 233–255.

Çömlekçi, M. F., & Başol, O. (2019). Gençlerin sosyal medya kullanım amaçları ile sosyal medya bağımlılığı ilişkisinin incelenmesi. *Manisa Celal Bayar Üniversitesi Sosyal Bilimler Dergisi*, *17*(4), 173–188.

Demirci, İ. (2019). Bergen Sosyal Medya Bağımlılığı Ölçeğinin Türkçeye uyarlanması, depresyon ve anksiyete belirtileriyle ilişkisinin değerlendirilmesi. *Anadolu Psikiyatri Dergisi*, *20*, 15–22.

Digital (2022a) Küresel Genel Bakış Raporu, (2022) Retrieved from: https://wearesocial.com/uk/blog/2022/01/digital-2022-another-year-of-bumper-growth-2/

Digital (2022b) Türkiye Raporu, (2022). Retrieved from: https://datareportal.com/reports/digital-2022-turkey

Dimitrov, D. M. (2010). Testing for factorial invariance in the context of construct validation. *Measurement and Evaluation in Counseling and Development*, *43*, 121–149.

Duman, D (2022). *Sosyal medya bağımlılığı görülen ergenlerde bireysel ve sosyal sorunların incelenmesi* (Unpublished master's thesis). Institute of Health Sciences, Ufuk University, Ankara.

Ehrenberg, A., Juckes, S., White, K. M., & Walsh, S. P. (2008). Personality and self-esteem as predictors of young people's technology use. *Cyber Psychology & Behavior, 11*, 739–741.

Folaranmi, A. O. (2013). A survey of Facebook addiction level among selected Nigerian university undergraduates. *New Media and Mass Communication*, *10*, 70–80.

Fornell, C., & D. F. Larcker (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*, 39–50.

Ganjayeva, N. (2019). *Üniversite öğrencilerinde sosyal medya bağımlılığı, Eysenckin kişilik envanteri ve özgüven arasındaki ilişkinin incelenmesi* (Master's thesis). Institute of Social Sciences.

Göksu, H. (2019). *Ergenlerin sosyal medya bağımlılığının akademik başarılarıyla ilişkisi ve çeşitli değişkenler açısından incelenmesi* (Unpublished master's thesis). Institute of Education Sciences, Afyon Kocatepe University, Afyonkarahisar.

Griffiths, M. (2000). Internet addiction-time to be taken seriously? *Addiction research*, *8*(5), 413–418.

Griffiths, M. D., & Szabo, A. (2014). Is excessive online usage a function of medium or activity? An empirical pilot study. *Journal of behavioral addictions*, *3*(1), 74–77.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th Ed.). Englewood Cliffs: Prentice Hall.

Hou, Y., Xiong, D., Jiang, T., Song, L., & Wang, Q. (2019). Social media addiction: Its impact, mediation, and intervention. *Cyberpsychology: Journal of psychosocial research on cyberspace*, *13*(1).

Karaiskos, D. & Tzavellas, E., Balta, G., & Paparrigopoulos, T. (2010). Social network addiction: A new clinical disorder? *European Psychiatry*, 25, 855.

Kim, S. W., & Kim, R. D. (2002). A study of Internet addiction: Status, causes, and remedies-focusing on the alienation factor. *International Journal of Human Ecology*, *3*(1), 1–19.

Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: The Guilford Press.

Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction—a review of the psychological literature. *International journal of environmental research and public health*, *8*(9), 3528–3552.

Liu, C., & Ma, J. (2020). Social media addiction and burnout: The mediating roles of envy and social media use anxiety. *Current Psychology*, *39*(6), 1883–1891.

Marengo, D., Fabris, M. A., Longobardi, C., & Settanni, M. (2022). Smartphone and social media use contributed to individual tendencies towards social media addiction in Italian adolescents during the COVID-19 pandemic. *Addictive Behaviors*, *126*, 107204.

Marsh, H. W., Hau, K.-T., Artelt, C., Baumert, J., & Peschar, J. L. (2006). OECD's brief self-report measure of educational psychology's most useful affective constructs: Cross-cultural, psychometric comparisons across 25 countries. *International Journal of Testing*, *6*, 311–360.

Muthen, B. O. (2001). Latent Variable Mixture Modeling. In: Marcoulides G. A., & Schumacker R. E. (Eds.). *New Developments and Techniques in Structural Equation Modeling* (1st Ed.) London: Lawrence Erlbaum Associates.

Özdemir, Z. (2019). Üniversite öğrencilerinde sosyal medya bağımlılığı. *Beykoz Akademi Dergisi*, *7*(2), 91–105.

Özgenel, M., Canpolat, Ö., & Ekşi, H. (2019). Ergenler için sosyal medya bağımlılığı ölçeği (ESMBÖ): Geçerlik ve güvenirlik çalışması. *Addicta: The Turkish Journal on Addictions*.

Reise, S. P., Widaman, K. F., & Pugh, R. H. (1993). Confirmatory factor analysis and item response theory: Two approaches for exploring measurement invariance. *Psychological Bulletin*, *114*, 552–566.

Şahin, C. (2018). Social Media Addiction Scale-Student Form: The Reliability and Validity Study. *Turkish Online Journal of Educational Technology-TOJET*, *17*(1), 169–182.

Şahin, C., & Yağcı, M. (2017). Sosyal Medya Bağımlılığı Ölçeği-Yetişkin Formu: Geçerlilik Ve Güvenirlik Çalişmasi. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, *18*(1), 523–538.

Smith, A., & Anderson, M. (2018). Social media use in 2018. Pew Research Center. http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/

Stanculescu, E. (2022). The Bergen social media addiction scale validity in a Romanian sample using item response theory and network analysis. *International Journal of Mental Health and Addiction*, 1–18.

Stark, S., Chernyshenko, O. S., Drasgow, F., Williams, B. A. (2006). Examining assumptions about item responding in personality assessment: Should ideal point methods be considered for scale development and scoring? *J. Appl. Psychol.*, *91*, 25–39

Steenkamp, E. M., & Baumgartner, H. (1998). Assessing Measurement Invariance in cross-national consumer research. *Journal of Consumer Research*, *25*(1).

Sussman, S. (2012). Steve Sussman on Rudolf H. Moos's "Iatrogenic Effects of Psychosocial Interventions: Treatment, Life Context, and Personal Risk Factors"—A Clarification. *Substance Use & Misuse*, *47*(13–14), 1601–1602.

TBM (Türkiye Bağımlılıkla Mücadele Eğitim Programı) (2015). Teknoloji canavara dönüşmeden. İstanbul: Şekil Ofset. https://tbm.org.tr/media/kitaplar/TBM_ortaokul_teknoloji_icerik_web.pdf

Thompson, B. (2004). *Exploratory and confirmatory factor analysis*. Washington: America Psychological Association.

Turel, O., & Serenko, A. (2012). The benefits and dangers of enjoyment with social networking websites. *European Journal of Information Systems*, *21*(5), 512–528.

Tutgun-Ünal, A., & Deniz, L. (2015). Development of the social media addiction scale. *AJIT-e: Bilişim Teknolojileri Online Dergisi*, *6*(21), 51–70.

Vandenberg, R. J. & Lance, C. E. (1998). A summary of the issues underlying measurement equivalence and their implications for interpreting group differences. In 1998 Research Methods Forum, 3, 1–10.

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices,

Widaman, K. F., & Grimm, K. J. (2014). Advanced psychometrics: Confirmatory factor analysis, item response theory, and the study of measurement invariance. In: Reis H. T., Judd C. M. (Eds). *Handbook of research methods in social and personality psychology* (2nd Ed.). New York: Cambridge University Press; p. 534–70.

Wu, Amery D., Li, Zhen and Zumbo, Bruno D. (2007). Decoding the meaning of factorial invariance and updating the practice of multi-group confirmatory factor analysis: A demonstration with TIMSS data. *Practical Assessment Research & Evaluation*, *12*(3).

Wu, Pi-Chu (2013). Addictive behavior in relation to the happy farm Facebook application. *Social Behavior and Personality*, *41*(4), 539–554.

Yue, H., Zhang, X., Cheng, X., Liu, B., & Bao, H. (2022). Measurement Invariance of the Bergen Social Media Addiction Scale Across Genders. *Frontiers in Psychology*, *13*, 879259.

Views of Prospective Science Teachers on Teaching Patriotism Value within the Scope of Science Class

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Abstract

In this study, the value of patriotism, which is one of the ten core values that students should acquire in the science course, was selected. In this context, the aim of the study is to reveal the views of pre-service science teachers on the teaching of patriotism and examine them in the context of value teaching. In this study, holistic single-case design, one of the qualitative research methods, was used. The research was conducted with pre-service science teachers studying at Süleyman Demirel University Faculty of Education in the 2019–2020 academic year. All the data in the study were obtained with the "Semi-Structured Interview Form," developed by the researcher and consisting of open-ended questions. To ensure the reliability of the research, three expert opinions were consulted. The reliability of the research was calculated using the Miles and Huberman formula (reliability = agreement / agreement + disagreement) by determining the number of agreements and disagreements in the comparisons. In the analysis of the data in the study, both descriptive and content analysis were used as qualitative analysis techniques. According to the findings obtained in the study, most pre-service science teachers do not have much knowledge about value teaching approaches (indoctrination, value clarification, value analysis, moral dilemma, etc.), they consider patriotism as consciousness, responsibility, sacrifice and sense of unity and solidarity, they think that patriotism value is not sufficiently included in the curriculum, they have almost half and half different opinions about the effectiveness of the science course in teaching patriotism value, that it is necessary to go beyond the official curriculum when teaching this value, that they will mostly use methods such as excursion and drama when teaching values, that they will mostly prefer materials such as films and documentaries when teaching values, that scientists will want to serve their own countries more in the context of patriotism, and that most of the pre-service teachers have high beliefs about teaching the value of patriotism. As a result of this research, it was concluded that for pre-service science teachers to teach the value of patriotism effectively, they should encounter more value teaching studies both in the dimension of curriculum and during their education life in the faculty to increase their awareness levels about this value.

Keywords: science, pre-service teachers, patriotism, value, value teaching

Introduction

Patriotism is defined by Janmaat and Mons (2011) as "sociological or social love in the social dimension that has the power and effect to integrate societies, cultures, and cultural environments through the love of human existence". Based on this definition, it can be said that patriotism is of great importance for the social cohesion of multicultural societies. Patriotism can also be defined as the love of one's country or the responsibilities of citizens towards their country (Primoratz, 2013). Macintyre (1984), emphasizing loyalty in the definition of patriotism, states that patriotic people want their own country to be better than other countries. Finn (2006) and Ravitch (2006) defined patriotism as embracing the homeland, being attached to it, and being proud of one's homeland. This pride can take many forms. For example, making one's homeland more livable than other places, making sacrifices for the well-being of the country, helping the country's development, and working for the benefit of the country.

Patriotism is also a value whose affective characteristics predominate. Affective characteristics have the power to directly or indirectly affect all learned behaviors that an individual will show throughout his or her life (Erişti & Tunca, 2012). From this point of view, we can say that children are not only taught but also educated in schools. Values are also an important affective domain dimension that should be taught to children in schools within the curriculum. In addition, it may be wrong to associate value only with the affective dimension. Because if we look at the value holistically, it can be said that it also has cognitive and psychomotor dimensions (Yaman, 2012).

Values should be associated with the courses in schools, and it is important that individuals acquire them functionally. It is one of the important duties of all teachers to consciously teach values to children who try to gain them informally in the family on formal grounds at school (Küçükahmet, 2004). In addition to teaching values to children effectively, it is also important how much the teacher who will teach that value has or thinks about that value. The meaning and perspective that the teacher attributes to the value to be taught are directly proportional to the effect that value will have on the child (Kurtdede Fidan, 2009).

Revealing the thoughts of pre-service teachers, who will transfer some value judgments to their students when they become teachers, about those value judgments before they start to work is also important (Elkatmış, 2009; Gökdere & Çepni, 2003). Because whether the prospective teacher has the value judgment that he or she will teach to his or her students when he or she starts to work or not will predict the values that the future generation will acquire. From this point of view, conducting such studies shows that there is a need for some preventive and guiding studies in terms of value teaching. As a matter of fact, revealing the attitudes and perceptions of pre-service teachers who will teach that value to students in studies on value teaching is also important in this respect.

Although different studies have been conducted on value teaching, there have not been many studies on the perceptions and attitudes of pre-service teachers towards the value to be taught. This research will contribute to the field in this respect and fill the gap in the literature. In addition, this study will create a sense of awareness in pre-service teachers and guide the studies to be carried out for value teaching in science courses. It is also seen that the importance and awareness given to value education have increased recently in our country (Gündüz, 2016; Beldağ, 2016). However, a limited number of studies (Babadoğan & Kunduroğlu, 2010) were found on the acquisition of values in science education.

Considering the relationship of values with society, since science is connected with society, it shows that science cannot be separated from values. In order to explain the nature of science to students, it is necessary to give special importance to morality, character, and ethical and scientific values. In other words, a science that does not contain values does not seem possible. Students are also likely to encounter a topic related to scientific ethics now or in the future (Reiss, 1999). Sadler (2004), on the other hand, states that individuals who have thoughts on socioscientific issues and take decisions on these issues should have an understanding of ethical values.

In the science lesson, the teacher realizes the interaction between science and value in every aspect and tries to show her students ways to understand the nature of science. At the end of this, values are formed, and they have the opportunity to spread in society (Allchin, 1999). While planning value-added activities in science education, concepts such as nature, environment, science, and knowledge should be taken into account. The teacher, who is the planner and implementer of education, should be aware of the interaction between science education and science (Bilir, 2019, p. 18). Science teaching is meaningful when it gives students a high level of values, ideals, and emotions, as well as cognitive competencies (Nieswandt, 2007).

In our country, values were first emphasized in the science curriculum prepared in 2005 (MoNE, 2005). With the addition of ten root values to the science curriculum renewed in 2018, research on value teaching in science has started to be included (Candarlı Arıkoz, 2020; Şentürk, 2020; Yaman, 2019; Tok, 2019; Türker, 2019, Çelik, Çamlıbel, & Duygu, 2016; Herdem, 2016; Yüce, 2011).

In addition to cognitive knowledge, students gain several skills in the affective domain in the science course. Value judgments (patriotism, benevolence, responsibility, honesty, patience, etc.) are among these affective domain skills. For example, a student will not only gain scientific thinking skills in an experiment but also contribute to the development of his or her country and fulfill his or her responsibility towards humanity by making new discoveries with his or her experiments. In this case, a sense of patriotism will develop. Thus, the student will have gained some value judgments.

When value teaching is mentioned, lessons such as life science and social studies with social content come to mind. However, values are related to all courses and have an interdisciplinary structure. Transferring values education to students by integrating it with the courses instead of providing it free from the courses can provide more successful results (Şentürk, 2020; Herdem, 2016; Kunduroğlu, 2010). Both social studies and science courses were created according to the collective teaching system (Kaya, 2018).

As a result of this research, a perspective will be formed by determining the views of pre-service science teachers on the value of patriotism, which will guide the curricula to be developed in the future. Thus, by raising awareness about the importance of this value, pre-service science teachers will have information about what they should do when teaching patriotism when they start to work. In this context, the aim of the study is to reveal the views of pre-service science teachers on the teaching of patriotism and examine them in the context of value teaching. To achieve this aim, answers to the following sub-objectives were sought:

1- What is the awareness level of science teacher candidates towards value-based teaching approaches?
2- What does patriotism mean according to science teacher candidates?
3- What are the views of pre-service science teachers about how much patriotism is included in the science curriculum?
4- What are the views of pre-service science teachers on how effective the science course is in teaching the value of patriotism?
5- What are the views of pre-service science teachers about whether to go out of the official curriculum when teaching patriotism?
6- What are the teaching methods that pre-service science teachers think they should use most when teaching patriotism?
7- What are the teaching materials that pre-service science teachers think they should use most when teaching patriotism?
8- How do prospective science teachers evaluate the contributions of scientists to humanity in the context of patriotism?
9- What are the views of pre-service science teachers on how the feeling of patriotism will affect the scientific studies of people?
10- What are the beliefs of prospective science teachers that patriotism can bring to students?

Method

Research Design

In this study, holistic single-case design, one of the qualitative research methods, was used. In single-case designs, as the name suggests, there is a single unit of analysis (an individual, an institution, a program, a school, etc.). This design is based on the questions of 'how' and 'why' and allows in-depth examination of a phenomenon or event that the researcher cannot control (Merriam, 2013, Creswell, 2007, Gerring, 2007). The research was conducted with prospective science teachers studying at Süleyman Demirel University Faculty of Education in the 2019–2020 academic year. Considering the accessibility of the research, an easily accessible sample was selected. In this context, prospective science teachers at the Faculty of Education of Süleyman Demirel University in Isparta constitute the sample of this study. First-year students were excluded from the study because they had not yet encountered much of the science curriculum. The distribution of pre-service science teachers at the university where the research was conducted is shown in Table 1 below.

Table 1. Demographic information of pre-service science teachers at the university where the research was conducted

	Gender					
	Male		Female		Total	
Grade	f	%	f	%	f	%
2nd Grade	6	6	26	26	32	32
3rd Grade	7	7	28	28	35	35
4th Grade	4	4	29	29	33	33
Total	17	17	83	83	100	100

As stated in Table 1, 17% (n = 17) of the science teacher candidates participating in the research were male and 83% (n = 83) were female. In addition, 32% (n = 32) of pre-service science teachers are second graders, 35% (n = 35) are third graders, and 33% (n = 33) are third graders. The study was based on volunteerism, and the

identities of the participants were kept confidential. The participants' gender, grade level, age range, and the type of school they graduated from varied. According to Yıldırım and Şimşek (2008), the researcher's adequate identification of the individuals who are data sources in the research is a measure that increases the external reliability of the research.

Data Collection

All the data in the study were obtained with the "Semi-Structured Interview Form," developed by the researcher and consisting of open-ended questions. In this technique, the researcher prepares the interview protocol, including the questions he or she plans to ask in advance. If the respondent answered certain questions in other questions during the interview, the researcher may not ask these questions. The semi-structured interview technique gives the appearance of being a more appropriate technique in educational science research due to a certain level of standardization and flexibility at the same time (Ekiz, 2003).

In the preparation of the form, firstly, the relevant literature was reviewed, and interview questions for pre-application purposes were revealed in line with the information obtained. Expert opinion was taken from three lecturers for the form, and some questions were rearranged and some questions were removed in line with the feedback. Then, based on the pre-interview with 20 people, some of the questions were corrected, and the form was finalized. The semi-structured interview form consists of 18 questions to determine the opinions of pre-service science teachers about teaching patriotism.

To ensure the reliability of the research, three expert opinions were consulted. These experts are academicians working at Süleyman Demirel University, Sakarya University, and Nevşehir Hacı Bektaşi Veli University. The reliability of the research was calculated using Miles and Huberman's (1994) formula (Reliability = agreement / agreement + disagreement) by determining the number of agreements and disagreements in the comparisons. In qualitative studies, a desired level of reliability is achieved when the agreement between expert and researcher evaluations is 90% or above. The reliability specific to this study was calculated at 94%. In terms of validity, reporting the collected data in detail and explaining how the researcher reached the results are among the important criteria of validity in a qualitative study.

Data Analysis

In the analysis of the data in the study, both descriptive and content analysis were used as qualitative analysis techniques. The purpose of descriptive analysis is to interpret the findings obtained by organizing them and to present them to the reader with integrity of meaning. In descriptive analysis, direct quotations were used many times to reflect the thoughts of the interviewed students in a striking way. The data obtained for this purpose were first described in a logical and understandable way, and then these descriptions were interpreted (Yıldırım & Şimşek, 2008).

In content analysis, it is aimed at reaching concepts and relationships that can explain the collected data. The data were first written by the researcher in the computer environment, and the concepts and relationships that can explain the collected data were reached (Yıldırım & Şimşek, 2008). In content analysis, the facts that may be hidden in the data are tried to be revealed. In content analysis, data are analyzed in four stages. These are coding the data, finding themes, organizing the codes and themes, and defining and interpreting the findings.

Findings

The data obtained from the research results are discussed below, respectively, within the scope of sub-objectives.

1. Findings for sub-objectives

Table 1. Awareness levels of pre-service science teachers towards value teaching approaches

Knowledge about value-based teaching approaches	f	%
Yes	22	22
No	78	78

Based on the table above, when we look at the opinions of pre-service science teachers about whether they have knowledge about value teaching approaches (indoctrination, value clarification, value analysis, moral dilemma, etc.) based on the results of the interview form applied to pre-service science teachers, it is seen that most of

them have no idea about this issue. The pre-service teachers who had an idea also stated that they did not know much about its content and that they had only heard its name.

The fact that pre-service science teachers who want to teach the value of patriotism to their students when they start to work have knowledge about what approaches they will use while teaching this value is a situation that positively affects the teaching of the value in the desired direction. Therefore, increasing the awareness of pre-service teachers about value teaching approaches during their university education can contribute both to the development of positive attitudes about themselves and to the development of a self-efficacy belief that they can easily teach that value to their students.

As a matter of fact, we can predict that it will not be easy for pre-service teachers who do not have much idea about value teaching approaches to teach this value to their students in the desired direction, and their students may have difficulties internalizing this value.

2. Findings for sub-objectives

Table 3. Opinions on the meaning of patriotism according to pre-service science teachers

Category	Theme	Code	f
Individual-oriented	Based on awareness	To do one's duty towards the homeland in the best way and to serve the homeland	13
		To do everything for the homeland	9
		To risk everything for the sake of the homeland	3
	Based on responsibility	To be hardworking	4
		To love the homeland	43
		To value the homeland	5
	Based on sacrifice	To be loyal to the homeland	4
		To value sacred values	1
Society-oriented		To fight for the homeland more than themselves when necessary	9
	Based on the feeling of unity	To be united in difficult times	6
		To view this as a whole and as united	3

According to the table above, based on the results of the interview form applied to pre-service science teachers, their perceptions of patriotism were categorized into two groups: individual-oriented (n = 77) and community-oriented (n = 23).

While individual-oriented patriotism was perceived as consciousness (n = 25) and responsibility (n = 52), community-oriented patriotism was thought to be more sacrifice (n = 14) and a sense of unity (n = 9). According to the answers given by pre-service science teachers, patriotism was mostly thought of as individual patriotism. Within the individual-oriented patriotism perception, it was mostly thought of as love for the homeland (n = 43). To summarize, the main opinion adopted by the pre-service teachers is that if a person feels that he or she belongs to his or her own homeland and has love for it, this will turn into patriotism over time.

When we look at the phenomenon of community-oriented patriotism, we see that the idea of fighting for one's homeland more than oneself (n = 9) and being together in difficult times (n = 6) is more common. We can think that such social feelings expressed by pre-service teachers complement individual feelings; in other words, both individually and socially, one has responsibilities for one's homeland.

The opinion of the pre-service teacher with the code T.9 about patriotism is as follows:
Patriotism is one's personal virtue. This virtue is the thing that keeps a person alive. We cannot live without it. Just as a person cannot live without honor, we cannot live without our homeland. If we think in this context, we can live without everything, but we cannot live without our homeland. The Turkish nation does not abandon its homeland at any cost.

Some of the other pre-service science teachers' opinions about patriotism are as follows:
T7: The one who loves his or her homeland the most is the one who does his or her duty the best.
T19: Love for the homeland means making sacrifices.
T26: Love for the homeland means coming together for the homeland even if we do not love each other.
T34: Love for the homeland means risking everything for its sake.

T49: Love for the homeland comes from faith.
T57: Love for the homeland is to follow Atatürk's path.
T61: To love the homeland is to protect the flag and to be in love with it.
T73: Homeland is sacred.
T82: Love for the homeland means to work hard for the homeland.
T99: Love for the homeland means fighting for it at all costs.

Considering the opinions of other pre-service science teachers, we can say that patriotism or patriotic love is not like any other love; it is the most important sanctity of a person; it is important to do all kinds of services for the homeland; it is important for everyone to do their duty well and fulfill their responsibilities; to protect the homeland against all dangers; to know and protect its past; to consider the interests of the country rather than their own interests; and to show the necessary struggle to move the country forward.

3. Findings for sub-objectives

Table 4. Pre-service science teachers' opinions on how much patriotism is included in the science curriculum

Inclusion of the value of patriotism sufficiently in the curriculum	f	%
Included	19	19
Not included	81	81

When we look at the opinions on whether the value of patriotism is sufficiently included in the science curriculum based on the results of the interview form applied to pre-service science teachers, most of the pre-service teachers (n = 81) think that the value of patriotism is not sufficiently included in the curriculum. The pre-service teachers who thought that it was included stated that it was not explicitly included but indirectly included.

Curriculum is the guiding element that leads pre-service teachers, directs them, and makes education functional and qualified. The curricula also reflect the educational philosophy of the country. If we want pre-service teachers to be raised consciously at the point of value teaching and to be aware of some information, it is important that we can easily see this in the programs. Because pre-service teachers, whom we expect to bring some root values such as patriotism to their students, are very much intertwined with this value while examining the science curriculum in the process of studying at the faculty of education and constantly encountering it, they may gain sensitivity.

Some values that are not encountered much in the curricula may directly affect the understanding of value teaching to be given in schools since they will not be given enough importance by pre-service teachers. Because people are sensitive to the issues, they are aware of and care about them.

4. Findings for sub-objectives

Table 2. Pre-service science teachers' views on the effectiveness of the science course in teaching the value of patriotism

The Extent that the Science Course is Effective in Teaching Patriotism Value	f	%
Effective	56	56
Not effective	44	44

According to the table above, based on the results of the interview form applied to the pre-service science teachers, when we look at the thoughts about whether the science course is effective in teaching the value of patriotism, we can say that they are almost divided into two at the point of whether it is effective or not. The pre-service teachers who think that it is effective are of the opinion that although the science course focuses more on science and thinking skills, the student can gain value judgment during the lesson, both with friends and while doing activities and experiments. The pre-service teachers who think that it is not effective think that the content of the science course is shaped more around science, technology, and thinking and that it would be better if the value of patriotism was given by associating it with social courses.

When value teaching studies are examined, it is seen that there are mostly studies conducted in social fields. In the field of science, studies on values have only recently started to be conducted. This situation may lead to different perceptions among pre-service teachers. A science course contains many values due to its nature. Patriotism is one of these values. We can easily state that people who do not protect nature and the environment,

do not produce science and technology for the development of their country, do not fulfill their responsibilities in recycling, and do not use the resources of their country correctly are far from having a sense of patriotism.

5. Findings for sub-objectives

Table 6. Pre-service science teachers' opinions on whether to go beyond the official program when teaching the value of patriotism

Deviating from the official curriculum when teaching the value of patriotism	f	%
Should be done	80	80
Should not be done	20	20

When we look at the opinions of pre-service science teachers about whether to go out of the official program when teaching the value of patriotism in the science course based on the results of the interview form applied to pre-service science teachers, many pre-service science teachers (n = 80) think that it is necessary to go out of the official program when necessary. The fact that pre-service science teachers have this opinion is necessary and important in terms of value teaching. Because practices are only included in the official program, an understanding based on teaching more subjects may occur. However, although it is not written in the program, the teacher's own design of some practices that he or she believes will be beneficial to his or her students can give effective results in terms of instilling the value of patriotism.

In the science curriculum that was renewed in 2018, ten core values were identified and associated with the learning outcomes. However, it is not clearly stated in which acquisition these values are included or how they should be given. When other explanations in the program are examined, it is stated that teachers who want to teach this value to their students can include their own practices. As a matter of fact, this situation offers various opportunities to the prospective teacher who wants to teach the value of patriotism to his or her students effectively. When awareness of this and the pre-service teacher's desire to teach that value are combined, it can produce good results for students.

6. Findings for sub-objectives

Table 7. The teaching methods that pre-service science teachers think to use the most when teaching patriotism

Theme	Code	f
Value Analysis	Case study	17
Action Learning	Travelling	33
	Drama	40
Value Analysis	Straight narration	6
	Question and answer	4

When we look at the opinions of the pre-service science teachers about which methods they think to use while teaching the value of patriotism based on the results of the interview form applied to the pre-service science teachers, it is seen that they will mostly prefer student centers. When we take into consideration that drama (n = 40) and excursion (n = 33) methods are the most considered methods, pre-service science teachers tend to prefer methods based on internalizing the value of patriotism rather than explaining it to the child.

The action learning approach, which is one of the value teaching approaches and has been much preferred recently, argues that it is more important to reflect that value in behaviors rather than say that one has that value. In other words, action is more important than discourse. Although pre-service teachers do not have much information about value teaching approaches, they think they should teach the value of patriotism according to the action learning approach. It is important for values to be seen in behaviors in terms of permanence and internalization. The fact that pre-service teachers have this view shows a predictive feature for students to learn it effectively in the future.

The opinion of the pre-service science teacher with the code T.31 about the teaching method he used the most while teaching the value of patriotism is as follows:
If we are going to teach the value of patriotism to children, we cannot do this by lecturing in the classroom. Just as the Japanese start by organizing a trip to the place where the atomic bomb was dropped to instill a sense of patriotism in children who have just started school, we need to start by showing Çanakkale and other historical locations to children in the same way. If the child feels that historical texture in his or her skin when he or she goes there, he or she will learn this value more meaningfully. While teaching the value of patriotism to children in the science course, the sense of patriotism can be instilled by organizing trips to scientific and technological places and making children feel the importance of such places in ensuring the development of the country.

The opinions of some of the other pre-service science teachers about the teaching method they use the most while teaching the value of patriotism are as follows:

T4: I bring sample cases or examples to the class and teach through discussing them.
T13: I plan plenty of scientific trips.
T28: I organize a drama environment to allow them to feel.
T35: I teach through lived events.
T44: I try to make it permanent by practicing and experiencing.
T57: I organize activities in which they take an active role.
T63: I talk about the struggle of Turkish scientists for their country.
T79: I make them feel the situation on the spot by taking them to places where science fairs are held.
T84: I put them in the place of scientists so that they could experience the event during the drama.
T98: I create scientific environments by organizing trips to universities.

7. Findings for sub-objectives

Table 8. Teaching materials that pre-service science teachers think they should use the most when teaching the value of patriotism

Theme	Code	f
	Documentaries	27
Based on feelings	Films	37
	Videos	1
	Novels	19
Based on teaching	Sagas	10
	Poetry	5
	Written materials	1

When we look at the opinions of the pre-service science teachers about which materials they think to use while teaching the value of patriotism based on the results of the interview form applied to the pre-service science teachers, it is seen that they will mostly prefer materials based on making them feel. Among these materials, films (n = 37) and documentaries (n = 27) come first.

Given that the materials that appeal to many sensory organs will provide more meaningful and permanent learning, the fact that the pre-service teachers stated that they would prefer these materials shows that they believe that the value of patriotism should be learned by experiencing that feeling, not by being told and read. The constructivist education concept defends that the student is at the center, learning should be provided by doing and experiencing, and the student should reach the information himself or herself. In this context, the fact that both the methods and materials used are student-centered shows that they will be more effective in teaching the value of patriotism.

The opinion of the pre-service science teacher with the code T.5 about the teaching material that he thought to use the most while teaching the value of patriotism is as follows:

When teaching the value of patriotism in the science course, I try to impress students emotionally by showing them some films about the contributions of scientists to their countries. We are emotional people as a country. We are very affected by the films we watch. In this respect, I think the best way to influence students is to make them watch films.

The opinions of some of the other pre-service science teachers about the teaching material they thought to use the most while teaching the value of patriotism are as follows:

T8: I think they will be very impressed by documentaries about technology.
T12: I encourage them to watch many films.
T24: I found some films about the feeling of patriotism.
T39: I make them read scientific novels.
T41: A documentary about the invention of science and its contribution to the country would be effective.
T55: I show videos about science and emphasize the value of patriotism.
T68: I make them watch documentaries about the lives of scientists.
T76: I teach the value of patriotism through films.
T84: I influence them by using documentaries and associating them with patriotism when appropriate.
T96: I foster a sense of empathy through scientific films.

8. Findings for sub-objectives

Table 3. Pre-service science teachers' opinions on how they evaluate the contributions of scientists to humanity in the context of patriotism

Associating the contributions of scientists to humanity with patriotism	f	%
Should be associated	78	78
Should not be associated with	22	22

When we look at the opinions of pre-service science teachers about how they evaluate the contributions of scientists to humanity in the context of patriotism based on the results of the interview form applied to pre-service science teachers, we see that most of them stated that this can be directly associated with patriotism. The pre-service teachers who associated it with patriotism stated that the inventor would contribute to the progress of his or her country and that he or she would experience a greater sense of belonging.

The sense of belonging and the perception of pride are value judgments that direct people's behaviors in the affective sense. People who have this feeling will enjoy doing something for their country and homeland in terms of patriotism. People who are loyal to their country and have gained a sense of loyalty will certainly fulfill their responsibilities to contribute more to their homeland.

The pre-service science teachers who do not associate this situation with it have the idea that scientists should do their scientific studies not only for the people in their own country but also for all humanity. It can be thought that this idea is also related to having humanist values. However, here we can see another value judgment other than patriotism.

9. Findings for sub-objectives

Tablo 4. The opinions of pre-service science teachers on how people with a sense of patriotism would affect their scientific studies

The dimension of the effect of people with a sense of patriotism on their scientific studies	f	%
It has an effect	84	84
It does not have an effect	16	16

When we look at the opinions of the pre-service science teachers about the effect of people with a sense of patriotism on their scientific studies based on the results of the interview form applied to the pre-service science teachers according to the table above, most of the pre-service science teachers (n = 84) think that this will be directly effective.

Pre-service science teachers think that a person who loves his or her homeland will certainly work harder for the development and progress of the homeland and will make himself or herself more willing to do scientific studies. No one has any doubt that patriotic people will do everything they can for the sake of their homeland in the best way possible. As a matter of fact, patriotic people often think of their homeland more than themselves. People with this thought have a positive feeling that their country will improve in every aspect by doing more scientific studies.

10. Findings for sub-objectives

Table 5. Pre-service science teachers' conviction that students can acquire the feeling of patriotism

Conviction that students can gain a feeling of patriotism	f	%
I am convinced	82	82
I am not convinced	18	18

When we look at the opinions of the pre-service science teachers about whether they can make their students gain a sense of patriotism based on the results of the interview form applied to the pre-service science teachers according to the table above, it is seen that most of the pre-service science teachers (n = 82) believe in themselves in this regard. It is seen that the pre-service teachers who believe in themselves have the opinion that it will not be very difficult to gain the feeling of patriotism if the person wants, believes, and becomes a model.

From another point of view, the believer pre-service teachers think that they can teach this value very easily if the person is conscious of this issue and gives it the necessary importance.

In value teaching studies, as much as the value to be taught, the fact that the person who will teach has that value, has a positive attitude about that value, and has a belief in himself or herself that he or she can teach it is also significantly effective. A person will not be very willing to teach something that he or she does not believe in, does not care about, or does not believe in its benefits. From this point of view, the fact that most pre-service teachers have a positive belief that they will teach the value of patriotism contributes to our inference that their students will learn this value in the desired direction.

Discussion

The following conclusions were reached based on the findings obtained from the research conducted to reveal the views of pre-service science teachers on the teaching of patriotism within the scope of a science course:

In this study, the views on teaching patriotism were revealed in the interviews with pre-service science teachers. As a matter of fact, the teacher's attitude towards a value will certainly affect the way he or she teaches that value. If the awareness levels of prospective teachers towards values are increased while they are studying at the faculty and they are provided with education in this direction, a more conscious understanding of value teaching will be formed. In this respect, the results of this study are also important for other studies.

When we look at the opinions of pre-service science teachers about teaching patriotism value, it is seen that most pre-service science teachers do not have much knowledge about value teaching approaches (indoctrination, value clarification, value analysis, moral dilemma, etc.). They consider patriotism as consciousness, responsibility, sacrifice, and a sense of unity and solidarity. They think that the value of patriotism is not sufficiently included in the curriculum. They have almost half and half different opinions about the effectiveness of the science course in teaching the value of patriotism. When teaching this value, it is necessary to go beyond the official curriculum when necessary. It was concluded that they would mostly use methods such as excursions and drama while teaching values, that they would mostly prefer materials such as films and documentaries while teaching values, that they had the opinion that scientists would want to serve their own countries more in the context of patriotism, and that most of the pre-service teachers had high beliefs about teaching the value of patriotism.

The other important result obtained in the study is that although pre-service science teachers' awareness levels about value teaching approaches are low, it is seen that their perspectives on the teaching of patriotism and their views on this value are positive. The fact that pre-service science teachers' views are in this direction gives clues that the generation to be raised can learn the value of patriotism in the desired way.

Another result of the research is the fact that pre-service science teachers did not encounter environments where they could gain much awareness about value teaching during their education at the faculty. If pre-service science teachers encounter activities related to value teaching directly or indirectly, their level of awareness will increase. If the awareness of pre-service teachers can be increased in this regard, we should not forget that the value of patriotism, which we want individuals to have, will be settled more easily.

As well as increasing the awareness levels of pre-service science teachers, starting to conduct value teaching research in the science course can contribute to the development of more positive attitudes towards the teaching of these values in terms of the next process (Candarlı Arıkoz, 2020; Şentürk, 2020; Yaman, 2019: Tok, 2019; Türker, 2019; Çelik, Çamlıbel, & Duygu, 2016; Herdem, 2016; Yüce, 2011).

The opinions of pre-service science teachers on the teaching of patriotism value show that value teaching studies, which have not been done much in the science course so far, will not be very easy at once. Value teaching studies, which have been carried out mostly in social fields so far, contribute to the formation of an understanding, but at the same time, they also lead us to a belated discussion on whether value teaching should be done in science courses.

As a matter of fact, it will be questioned how to try to make value teaching more functional with the start of such research on teaching patriotism in the field of science. In this study, the views of pre-service science teachers on the teaching of patriotism were determined and compared with other studies in the literature, and the missing questions in the literature were tried to be answered.

Pre-service science teachers thought of patriotism mostly as a sense of duty, service, risking everything, protection, responsibility, diligence, commitment, struggle, holiness, valuing, sacrifice, and a sense of unity and solidarity. In the study conducted by Avcı and İbret (2016), pre-service teachers explained the concept of patriotism with the categories of loving, belonging, protecting, being responsible, and being a good citizen. Again, in the study conducted by Çelikkaya and Öztürk Demirbaş (2013), pre-service teachers saw patriotism as protection and sacrifice, and in the study conducted by Ersoy and Öztürk (2015), pre-service teachers saw patriotism as loving and being loyal to the country, fulfilling their duties and responsibilities, and making efforts for the development of democracy and human rights.

The results of the studies in the literature and the perception of patriotism of pre-service science teachers in this study are similar. Thus, we see that patriotism is more centered around loving, valuing, protecting, and performing duties towards the country. In other words, the phenomenon of patriotism can be evaluated in the sense of risking everything for something loved.

Given the view that pre-service science teachers' perceptions of the value of patriotism will also affect the way they teach this value, it shows that when they start to teach patriotism, they will adopt methods such as action learning and value analysis, which are student-centered and based on learning by doing and experiencing, making the student active and making the student assimilate the value more. This situation supports the view that indoctrination and preaching will no longer be very effective in value teaching. Pre-service science teachers indicated that they would prefer to use travel, drama, and case study methods while teaching the value of patriotism, indicating that they think that student-centered approaches are important.

Similarly, while teaching the value of patriotism, pre-service science teachers stated that they would mostly use teaching materials such as documentaries and films. It is seen that they would not prefer textbooks and other written materials. Documentaries and films offer more concrete experiences to students (Yıldız, 2018, Demircioğlu, 2007). In other words, it appeals to more sense organs and provides meaningful, permanent learning. According to the constructivist education approach, primary data sources are more useful for students and motivate them more. The fact that pre-service teachers mostly use methods such as excursions, drama (Gündüz, Aktepe, & Mertol, 2019), and case studies as methods supports this situation in terms of materials. If method and material compatibility are ensured in learning and teaching processes, it will be easier to achieve the desired goals. We can teach a subject such as patriotism, which is difficult to perceive and teach because it is in the affective domain, only with more concrete materials and methods based on making students feel.

Another important issue is that the teacher has important duties while teaching values in schools, as well as whether the teacher has these values himself or herself, his or her level of knowledge on this subject, the meaning he or she attributes to this value, his or her personality, communication, and being a role model for students (Ada, Baysal, & Korucu, 2005).

Conclusion and Recommendations

Patriotism value has become a subject that has been researched more recently (Açık, 2020; Tarhan, 2019; Karaderili, 2019; Bilginer, 2019; Gündüz, 2018, Yıldız, 2018, Avcı, İbret, & Avcı, 2017, Gümüş, 2016, Gündüz, Keçe, & Gündüz, 2016; Avcı & İbret, 2016; Elban, 2011; Yong-jun, Xiao-bo, & Lan, 2009).

Since patriotism is an affective-based subject, its teaching is not like other subjects. In other words, it is more difficult to teach and measure. The fact that the affective domain is affected by many components or has a constantly changing structure naturally makes value teaching, especially the teaching of patriotism, difficult. If we consider that patriotism is an emotion formed in a long process for individuals living in a society, the events faced by the society in this process and the situation of people being affected by these events continue to affect patriotism in various dimensions. However, considering that the affective domain is as important as other domains, although it seems difficult to teach this domain, it should not be ignored.

As a result, this study has shown that, according to the views of pre-service science teachers, it is necessary to use student-centered methods and effective materials to teach the value of patriotism. Action learning and the value analysis method also support this view. In this sense, it is also important that pre-service science teachers want to use visual and multisensory materials, such as documentaries and films, while teaching this value.

However, it should not be forgotten that for pre-service science teachers to teach the value of patriotism effectively, they should encounter value teaching studies both in the curriculum dimension and throughout their education life in the faculty to increase their awareness levels about this value.

Based on the findings of the study, the following suggestions have been developed:

- This study was conducted with prospective science teachers studying at Süleyman Demirel University, Faculty of Education. The value of patriotism can also be investigated in cultural and geographical regions by taking into consideration the teacher candidates in different regions of Turkey. More detailed analyses can be made if different variables are included in the research.
- This research was conducted with pre-service science teachers. Teachers who are on duty can also be included in the research, and comparison-style data can be obtained.
- Value education activities should be organized to raise awareness among faculty members and especially teacher candidates.
- Longitudinal studies should be conducted to reveal the change in patriotism's value over the years and the situations in which it is affected, and healthier determinations should be made about the problems encountered.
- In order to make the teacher candidates studying at the faculty better understand the importance of patriotism in science lessons, field trips should be organized to show how important science and technology are in the development of the country.
- Pre-service teachers should be offered opportunities to develop projects consisting of science, technology, and patriotism during their education at the faculty.
- In order to increase the level of awareness of teacher candidates and make them feel the value of patriotism, scientific journals that include Turkish scientists and include their contributions to the country and where they can follow the developments in science and technology should be recommended.
- While pre-service teachers do internships at schools, practices that teach students the value of patriotism should also be included.

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The contribution rates of the authors are equal.

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There is no conflict of interest.

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References

Açık, İ. (2020). *Teaching cultural heritage sensitivity and patriotism values with biographies in primary school 4th grade social studies course,* Unpublished Master's Thesis, Zonguldak Bülent Ecevit University, Zonguldak

Ada, S., Baysal, Z. N. ve Korucu, S. (2005). Evaluation of classroom teachers' reactions to negative classroom behaviours in terms of character education and 2005 primary education programme, *Journal of Values Education,* 3 (10), 7-18.

Allchin, D. (1999). Values in science: An educational perspective, *Science and Education, 8*, 1-12.

Avcı, A. A., İbret, B.Ü. and Avcı, E. K. (2017). Social Studies Teachers' Views on the Acquisition of Patriotism Value, *Elementary Education Online*, 16 (4), 1558-1574.

Avcı, E. K. and İbret, B. Ü. (2016). Investigation of Pre-school Teacher Candidates' Opinions on Patriotism Value, *Kastamonu Journal of Education*, 24 (5), 2501- 2518.

Babadoğan, C. and Kunduroğlu, T. (2010). The effective ness of 'values education' programme integrated with the 4th grade science and technology instructional programme, *Procedia-Social and Behavioral Sciences*, 9, 1287-1292.

Beldağ, A. (2016). Values education research trends in turkey: A content analysis, *Journal of Education and Training Studies*, 4(5), 101-112.

Bilginer, R. (2019). Investigation of secondary school students' perceptions towards the value of patriotism, Unpublished Master's Thesis, Gazi University, Ankara

Bilir, S. (2019). The effect of laboratory-assisted teaching on academic achievement and attitude in elementary school fourth grade science course simple electrical circuits unit. Unpublished master's thesis, Kastamonu University, Kastamonu

Candarlı Arıkoz, F. (2020). Investigation of secondary school students' interest in science course and their level of reaching scientific values, Unpublished Master's Thesis, Aydın Adnan Menderes University, Aydın

Creswell, W. J. (2007). *Qualitative inquiry & research design: Choosing among five approaches*, USA: SAGE Publications

Çelik, H., Çamlıbel, D., & Duygu, E. (2016), "Prospective Teachers' Views on Values Encountered in Science Laboratory", Kırıkkale *University Journal of Social Sciences,* 6(2),185-207

Çelikkaya, T. and Öztürk Demirbaş, Ç. (2013). Prospective social studies teachers' views on values in social studies curriculum, *The Journal of Academic Social Science Studies*, 6 (5), 527- 556.

Demircioğlu, İ. (2007). The Place and Importance of Films in History Teaching, *Bilig Social Sciences Turkish World Journal*, 42, 77-93.

Ekiz, D. (2003). *Introduction to research methods and methods in education*, Ankara: Anı Publishing

Elban, M. (2011). Investigation of the Relations between Secondary Education 11th Grade Students' Attitudes towards History Course and Patriotism Attitudes, Unpublished master's thesis, Gazi University, Ankara

Elkatmış, M. (2009). *Value teaching in life science teaching*, (Editor: Bayram Tay), Life science teaching, Ankara: Maya Akademi

Erişti, B., and Tunca, N. (2012). Opinions of primary school science and technology teachers about developing students' affective competence, *Turkish Online Journal of Qualitative Inquiry*, 3 (1), 36-54.

Ersoy, A. F. and Öztürk, F. (2015). Patriotism as a citizenship value: the perception of prospective social studies teachers, *Elementary Education Online*, 14 (3), 974- 992.

Finn, C. E. (2006). Teaching patriotism-with conviction, *Phi Delta Kappan*, *87*(8), 580.

Gerring, J. (2007). *Case study research: Principles and practices*, New York: Cambridge University Press

Gökdere, M. and Çepni, S. (2003). Teacher's Role in Values Education given to Gifted Children, *Journal of Values Education,* 1(2), 93-103.

Gümüş, O. (2016). Teaching the Values of Respect for Turkish Elders, Care for Family Unity and Patriotism in Primary School 4th Grade Social Studies Course with Activities Based on Mixed Approach, Unpublished Doctoral Dissertation, Gazi University, Ankara

Gündüz, D.D. (2018). History teachers' value approaches that they use while teaching the value of patriotism to secondary school students, Unpublished Master's Thesis, Süleyman Demirel University, Isparta

Gündüz, M. and Bağcı, M. (2019). Science Teachers' Awareness of Stem Values and Methods of Teaching Values, *International Journal of Social Sciences Education,* 2 (5), 184-197

Gündüz, M. (2016). Classifying values by categories, *Journal of Education and Training Studies,* 4(10), 212-220.

Gündüz, M. Keçe, M. and Gündüz, D. (2016). Determination of Perceptions towards the Value of "Being Turkish". IV. International History Education Symposium, Muğla Sıtkı Koçman University, 01-03 September 2016.

Gündüz, M., Aktepe, V. and Mertol, H. (2019). Determination of the Activities Used by Teachers in Acquiring the Value of Patriotism to Preschool Children, *Iğdır University Journal of Social Sciences*, 19, 387-406

Herdem, K. (2016). The effect of values education activities integrated with the subjects of seventh grade science course on students' value development, Unpublished Master's Thesis, Adıyaman University, Adıyaman

Janmaat, J. G. ve Mons, N. (2011). Promoting ethnic tolerance and patriotism: The role of education system characteristics. *Comparati ve Education Review*, *55*(1), 56-81.

Karaderili, Ş. (2019). Social studies teachers' views on the acquisition of patriotism value, Unpublished Master's Thesis, Uşak University, Uşak

Kaya, E. (2018). *The basis of life science, social studies, and science courses: collective teaching system*, Ankara: Pegem Akademi Publishing.

Kunduroğlu, T. (2010). 4th grade Science and Technology Course Curriculum and Integrated "Values Education" Programme, Unpublished Master's Thesis, Ankara University, Ankara.

Kurtdede Fidan, N. (2009). Prospective Teachers' Opinions on Value Teaching, *Journal of Theoretical Educational Science*, 2(20), 1-18.

Küçükahmet, L. (2004). *Planning and Evaluation in Teaching*, Ankara: Nobel Publication Distribution

Macintyre, A. (1984). *Is patriotism a virtue?* Lawrence: University Press of Kansas.

Merriam, B. S. (2013). *Qualitative research: A guide for design and application* (Translation Editor: S. Turan), Ankara: Nobel Publication Distribution

Miles, M.B and Huberman, A.M. (1994). *Qualitative data analysis*, Thousand Oaks, CA: Sage

Nieswandt, M. (2007). Student affect and conceptual understanding in learning chemistry. *Journal of Research in Science Teaching*. *44*(7), 908-937.

Primoratz, I. (2009). Patriotism and the value of citizen ship. *Acta Analytica Tradition*, *24*(1), 63-67.

Ravitch, D. (2006) Should we teach patriotism? *Phi Delta Kappan*. *87*(8), 579-581.

Reiss, M. J. (1999). Teaching ethics in science, *Studies in Science Education*. *34*, 115-140.

Sadler, T. D. (2004). Informal reasoning regarding socioscientific issues: A critical review of literatüre. *Journal of Research in Science Teaching, 4*, 513-536.

Şentürk, G. (2020). Teachers' opinions on the applicability of values education in science course, Unpublished Master's Thesis, Yıldız Technical University, Istanbul

Tarhan, E. (2019). Patriotism attitudes and opinions of social studies teacher candidates in the context of citizenship, Unpublished Master's Thesis, Bolu Abant İzzet Baysal University, Bolu

Tok, B. (2019). Classroom teachers' views on value teaching in science course: Case study, Unpublished Master's Thesis, Gazi University, Ankara

Türker, A. (2019). Investigation of the value judgements of prospective science teachers, Unpublished Master's Thesis, Burdur Mehmet Akif Ersoy University, Burdur

Yaman, E. (2012). *Values Education: New Horizons in Education,* Ankara: Akçağ Publications

Yaman, H. (2019). The effect of student-based activities prepared within the scope of science course on gaining responsibility value, Unpublished Master's Thesis, Eskişehir Osmangazi University, Eskişehir

Yıldırım, A. and Şimşek, H. (2008). *Qualitative Research Methods in Social Sciences*, Ankara: Seçkin Publications

Yıldız, R. (2018). Social Studies Teachers' Views on Patriotism and Patriotism Education in Social Studies Lessons, Unpublished Master's Thesis, Dumlupınar University, Kütahya

Yong-jun, D., Xiao-bo, S., Lan, W. (2009). A Comparative Study of History Interests Between American and Chinese College Students, *US- China Education Review*, 6 (12), 59-66.

Yüce, Z. (2011). Science teaching students' knowledge about biotechnology and their bioethical approaches towards biotechnology applications: Tutum, opinion and value judgements, Unpublished Master's Thesis, Gazi University, Institute of Educational Sciences, Ankara

Growing Up with an Additional Disabled Child: The Life Story of a Mother

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Abstract

The aim of this study, which was carried out according to the life story/narrative research design, which is one of the qualitative research methods, is to examine the life story of a mother living with a child with an additional disability. In this context, a 5-year-old child with deficiencies such as hearing loss, autism, and ADHD and his mother were included in the study. The research data consists of semi-structured interviews, observations, and document analysis. The collected data were analyzed with the inductive analysis method. As a result of the analysis, four main themes and ten sub-themes were identified. It was found that the mother had problems with the child's diagnosis, the use of hearing aids, placement in appropriate educational environments, familial support, and social support services. Based on these problems, suggestions have been made regarding legal arrangements and the planning of relevant legislation.

Keywords: additional disability, child, mother, life history, narrative research

Introduction

An estimated 40% of children with hearing loss have additional disorders that may affect education and adaptive development (Gallaudet Research Institute, 2003). These children should undergo comprehensive psychological evaluations for a variety of reasons. Additional disability is a term that describes the co-occurrence of two or more disabilities (Eldeniz-Çetin, 2013; Westling & Fox, 2009). Children with additional disabilities may have more needs in their developmental processes than their peers with one disability. They show significant limitations in terms of being able to live independently in their daily lives (Westling & Fox, 2009). These children, who constitute a homogeneous group compared to their peers, need more support (Bruce, 2011; Giangreco, 2006). Many children with additional disabilities, whose incidence or prevalence is low, continue their lives through home care services without being in school. All these disabilities seen in children can create some difficulties not only in the child's life but also in the family in which they live.

Previous studies have stated that families experience problems in their family order with the birth and participation of a child with a single disability and consequently experience a stressful parenting period (Clark & Drake, 1994; Davis & Carter, 2008; Seltzer et al., 2001). Especially the process starting with the birth of the child can lead parents to different emotional difficulties. These challenges include stress, financial and economic problems, spiritual difficulties, decreased quality of life, depression, and other emotional states that develop due to them (Farrel & Khan, 2014; Hallahan et al., 2018; İnce & Yıkmış, 2021; Wake & Carew, 2016). Mothers frequently experience emotions such as guilt, anger, and not accepting the situation during these periods (Lederberg & Golbach, 2002; Zaidman-Zait, 2007). At first, it is known that a child with a disability negatively affects the daily activities of families (Barnett & Boyce, 1995) and the well-being of families (Gray & Holden, 1992). Among the family members who are most negatively affected by the process are mothers, who are usually the primary caregivers of children.

After the child's birth, the mother spends the most time during the developmental process (Hill, 2015; Karabulut & Tavil, 2016). The needs of a child with additional disabilities may be different and more complex than those of a child with typical development or a child with a disability. Meeting these needs can sometimes cause mothers to find themselves in an exhausting process (Nakken & Vlaskamp, 2007; Van Timmeren et al., 2016).

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In studies on children with additional disabilities, it has been concluded that mothers spend more time caring for their children than mothers of typically developing children (Luijkx et al., 2017; Mencap, 2001; Tadema & Vlaskamp, 2010). It is very important to understand the experiences of mothers, who are the primary caregivers, during the process and to determine how they can solve these experiences or what the places are where they cannot solve them. Exploring this process will help improve the quality of the support services provided to mothers. At the same time, the mother will ensure improvements in the organization of policies and planning (Hill, 2015).

When the literature is examined, studies address the difficulties experienced by mothers with children with additional disabilities (Graungaard & Skov, 2007; Karadağ, 2009; Sardohan-Yıldırım & Akçamete, 2014; Sardohan-Yıldırım & Vezne, 2022) and the needs of families experiencing these difficulties (İnce et al., 2022; Redmond & Richardson, 2003; Sloper & Turner, 1992). There are also studies based on the opinions of families (Bahçıvanoğlu-Yazıcı & Akçin, 2014; McIntyre et al., 2004). There is no study directly dealing with the life story of a mother who has a child with an additional disability. When evaluated in this context, this study constitutes the first example of a study in the national literature designed as life story or narrative research that tries to explore the process of a mother with a child with an additional disability from the birth of her child until the age of 5. Life story or narrative research allows us to collect information about people's lives and experiences. Thanks to this information, past knowledge and experiences can be transferred to the future. At the same time, it enables us to collect information about the process with individual life stories and, with this information, determine what solutions to offer to solve problems and what improvements to make.

Purpose of the Research
To understand the quality of education programs, support systems, and services offered in many areas for individuals with additional disabilities in Türkiye research on children with additional disabilities and their families should be conducted. Thanks to these studies, it is necessary to identify the negativities in the system and develop the necessary improvement and intervention systems. Through such research that tries to understand the other developmental stages of the child from the mother's life experiences, necessary arrangements can be made for children with additional disabilities and their families from the child's first diagnosis. For parents to accept their children with disabilities from the first moment and to establish a qualified interaction or relationship with them, studies on how the process works should be increased. This study aims to examine the life experience of the mother of a child with an additional disability from the birth of her child until the age of 5. Answers to the following research questions are sought for this purpose:
1. What are the mother's views on diagnosing the child with additional disabilities?
2. What are the mother's opinions about her life after learning that the child has an additional disability?
3. What are the mother's opinions about her experiences during the process?
4. What are the mother's opinions about her expectations and concerns about the child with additional disabilities?

Method

In this section of the study, information about the research design, the process of determining the participants of the research, the participants of the research, data collection techniques, data analysis, and the credibility of the research is presented.

Research Design
This study examines the mother's life experience with a child with autism spectrum disorder and communicative disability, in addition to hearing loss, from the birth of her child until the age of 5. Depending on this purpose, the research was conducted with a qualitative research method (Bogdan & Biklen, 1997). Qualitative research methods can be designed in different ways according to the subject and purpose of the study. Since this research examines the mother's life story of a child with an additional disability, it was designed as life story/narrative research (Creswell, 2012). In life story research, researchers pay attention to three important dimensions. These are: a) life has temporal dimensions and deals with temporal situations; b) focusing on individual experience and the social in a balanced manner by the research and its purpose; and c) occurring in specific places and in specific sequences (Clandinin & Connelly, 2000).
In life story research, we create field texts as we live in the field with our participants, whether it is a classroom, a hospital room, a meeting place where stories are told, or the participant's lived environment. Various field data collection techniques in life story research include photographs, field notes, interviews, and document analysis (Clandinin & Connelly, 2000). Life story research is defined as conveying the personal experiences of people who have lived the process to others from their perspectives (Ersoy & Bozkurt, 2017). Within the scope of this

study, the mother's experiences with her child with additional disabilities were examined based on her narratives.

Study Group
For the mother to be included in the study, qualifications such as having a child with an additional disability and having at least 3–5 years of experience with her child were sought. Within the scope of the research, forms containing brief information about the purpose, importance, and process of the research were shared with five special education and rehabilitation centers in two different cities. Then, the contact numbers of children with disabilities in addition to hearing loss and their families attending the rehabilitation centers were sent to the researcher with the permission of the families. The researcher conducted a preliminary interview with two families determined by the purpose of the study. After this interview, one of the families agreed to participate in the study. The necessary permissions for the research were obtained from the mother, who decided to participate in the study.

The participant's mother resides in a province in Türkiye. The mother, whose place of birth is different from her place of residence, is 35 years old. The mother graduated from high school and married at a very young age. The mother and her husband have been married for eight years and have two children. Both children are boys. The older child is 9 years old, attends the 4th grade of primary school, and has no disability.

The child with an additional disability was given the code name Emre. Emre is 4.5 years old and attends a special education and rehabilitation center. In addition, he attends a play therapy group and receives support training to improve his communicative skills. He goes to the rehabilitation center three days a week (Monday, Wednesday, and Friday). He attends the playgroup on Tuesdays. Emre has congenital hearing loss and was diagnosed through a newborn hearing screening. He underwent educational diagnosis and evaluation at the Guidance and Research Center and was diagnosed with autism spectrum disorder, attention deficit hyperactivity disorder, and hearing loss. Emre communicates intensively with signs. He can form single-word words. He has problems with social interaction and maintaining attention.

Data Collection Techniques
There are various data collection techniques in life story research, one of the qualitative research methods (Bogdan & Biklen, 1997). Within the scope of this research, semi-structured interviews were conducted according to the purpose of the study. Researchers diaries were written from the beginning to the end of the research. Observations were made to explore the natural environment of the mother and child at home. Documents related to the medical and educational background of the child were examined.

Interview
Interviews constitute life story research's primary data collection technique (Seggie & Bayyurt, 2015). Interviews with the participants include the process of getting in-depth information about their lives. This study conducted semi-structured interviews to examine the mother's life story in depth. According to the purpose of the study, interview questions were prepared after a detailed review of the literature. In the preparation of the questions, it was aimed at the mother to share the process of telling her life story. During the process, four different interviews were conducted with the mother. Each interview lasted an average of 54 minutes, and a total of nearly 5 hours of semi-structured interviews were conducted with the mother. Two of the interviews took place at the rehabilitation center where the child was attending, while the other two took place at the mother's home.

Diaries (Reflective Journal)
In the qualitative research method, researcher diaries are frequently used to understand the process of the research in detail and to find solutions to the problems encountered (Glesne, 2013). The researcher recorded diaries from the first stage of the research to the end. After each data collection process, the researcher recorded the diaries without spending too much time. During the research process, 70 minutes of researcher diary audio recordings were made.

Observations
The naturalness of the data collected through observations is ensured (Yıldırım & Şimşek, 2021). Within the scope of this study, permission was obtained in advance from the mother for observation at home. Then, video recordings were taken by entering their homes when they were available. The aim is to ensure that the child's additional disability is monitored and checked by another field expert. Five video recordings of the child's activities with his or her mother were taken. These videos were watched by another researcher who has expertise in the field of special education and additional disabilities, and his or her opinions about the child's additional disabilities were taken.

Document Review
To obtain supportive data from existing written or visual materials in the research process, document reviews are conducted in a qualitative research method (Yıldırım & Şimşek, 2021). The documents examined within the scope of this research consist of Emre's educational identification and evaluation forms, checklists containing the evaluations of his teachers at the rehabilitation center, and the result of the newborn hearing screening test.

Data Analysis
Within the scope of the current research, the data collected through interviews, researcher diaries, observations, and document reviews was analyzed and interpreted using the inductive method used in the qualitative research method. In studies with insufficient prior knowledge, the collected data are analyzed, and codes are first created. Sub-themes are formed from the codes developed in the following process, and finally, the themes of the research are developed (Yıldırım & Şimşek, 2021). 62 codes were formed from the data analyzed based on the research questions.

Validity and Reliability
All research must present valid and reliable data. This constitutes one of the essential criteria of the research. Validity and reliability in qualitative research are ensured by credibility. Within the scope of this research, different measures were taken for the research paradigm to ensure credibility. These are as follows:
- The whole process, from the beginning to the end of the research, was recorded in the researcher's diary.
- The interview questions prepared for the research were finalized by another expert who has been teaching qualitative research and special education for many years.
- Permissions, such as ethics committee and participant approval, were obtained.
- Each interview was transcribed and sent to the participant for confirmation.
- The interview transcripts were reviewed by another eye to prevent data loss.
- The data obtained were described in detail.
- All the data obtained were kept confidential by adhering to the principle of confidentiality to prevent anyone else from accessing them during the research process.

Results and Discussion

Within the scope of the research, the data collected through interviews, observations, diaries, and documents were analyzed inductively. Sixty-two codes were obtained from the analyzed data. From these codes, four main themes and 12 sub-themes were reached. Information on the main theme and sub-themes is shown in Table 1.

Table 1. Information on the theme and sub-themes.

Main theme	Child Theme
Views on the Diagnosis Process	*His experience with the hearing screening test process*
	Views on hearing loss
Mother's Experience with the Process of Using Hearing Assistive Technologies	*Opinions on Hearing Aids*
	Having problems with family due to hearing aids
	Views on the process of getting a cochlear implant
Mother's Views on the Process of Learning That the Child Has an Additional Disability	*Mother's views on family life processes after additional disability*
	Opinions of the additional disabled child on the effect of the mother's social relations
	Opinions of the mother on the educational processes of a child with an additional disability
	Mother's views on the health-related life of the child with an additional disability
Mother's Views on Her Life in the Process	*Regrets of the past*
	Opinions on financial difficulties
	Opinions on social support

Views on the Diagnosis Process

The audiology department of a university hospital in his province for the newborn hearing screening test. The mother expresses the process experienced by Emre, who could not pass the hearing test when he first went.

"So when Emre was first born, it couldn't pass through one of his ears; my teacher said it went through one. Then they called us four times to hear the newborn; in all four of them, it went through one ear and stayed in one ear. Then we were transferred to Umuttepe."

His experience with the hearing screening test process

The hearing screening test, which Emre went to for the fourth time, revealed that he had hearing loss. To perform the hearing test, especially very young children must be asleep during the test. Regarding this process, the mother expressed it as follows:

"He would be put to sleep there. They told me to sleep, and I said, I mean, not to sleep. That is, he does not stay in a state to sleep for a long time. They gave medicine intravenously, and it became clear in 45 minutes."

Thanks to the newborn hearing screening program put into practice by the Ministry of Health in our country in 2004, it is possible to detect hearing loss with various tests immediately after birth (Genç et al., 2005; Kemaloğlu, 2015).

Views on hearing loss

Emre could not pass the newborn hearing test on his fourth visit. The mother expressed her feelings when she learned the test result as follows:

"Mrs. Merve said, "So many and so many decibels—one was at 85 and the other at 50%. That's how you will be equipped with devices; get a device as soon as possible"."

"When I first learned it, my teacher did not expect it at all. I was shocked. He did not have it in his brother, so there is no family. I cried there; I went alone; I was alone."

Parents who have children with disabilities go through some emotional processes when they learn about their child's inadequacy. Studies examining these processes in the literature define the process as a stage model (Akçamete, 2011; Cavkaytar, 208; Kearney & Grifin, 2001; O'Shea et al., 2001). The phase model consists of three phases. The first phase is anger, rejection, and depression; the second stage is confusion, guilt, and anger; and the third stage is bargaining, acceptance, and compliance. When the mother learned about Emre's condition, it was seen that she experienced the first phase with the expression "*I was shocked"*. Later, the mother accepted the event, tried to focus on the solution, and adapted to the situation.

"That's how you will be equipped with devices; get a device as soon as possible. We already bought it within a month."

The mother wanted to benefit from hearing aid technologies to minimize hearing loss's effects. In this way, he got over the state of shock he experienced and learned to live with it by accepting the event.

Mother's Experience with the Process of Using Hearing Assistive Technologies

Opinions on Hearing Aids

After the mother learned that the audiologist should purchase a hearing aid, she bought a suitable hearing aid for Emre. The mother described the process related to the hearing aid as follows:

"Well, our devices were not good at all, my teacher, so I went on a recommendation, but they never directed us. Well, I wanted to brand a* or something like b*. But they gave us a very different brand. I can't think of the name right now, but I will tell you. I gave them to someone here too. Then he did not benefit from them either. It was so scratchy. The boy is big, and he talks. Arda even studies here. They gave it back to me. Then they are in my hands after they are equipped. That's right, sir."

The mother thinks that she bought a hearing aid for Emre, but it becomes clear that the device is useless. We can understand that he is doing general research on the devices by giving the device's brand name. Hearing aids or cochlear implant applications are recommended for children with hearing loss, depending on the type and degree of loss (Moeller et al., 2009). According to the mother, Emre's inability to benefit from the hearing aid is as follows:

"So I don't think it's enough. He said to take it to Istanbul. We took him to Kadıköy. Selim Bey greeted us there but said that his devices were out of order. So nothing has been done here."

Hearing aids are used for individuals with milder hearing loss. In determining this, hearing specialists such as ENT specialists and audiologists should be evaluated. Emre could not benefit from the hearing aid due to the type and degree of his loss.

Having problems with family due to hearing aids

The mother stated that she had difficulties due to both the inadequacy of the hearing aid and the lack of moral support from her husband during the process. Regarding this issue, he stated the following:

"This is where we get where we go. For example, they could not mold. Omar's devices were squeaking a lot; that crowing sound made us angry, so let me say that, my teacher. Shut up, my wife was saying, for example.

Mum, shut up; it's always me. It's always me. This time, I couldn't make it home. We were arguing a lot, but sometimes I say it was worth it, teacher."

Having a child with a disability in the family develops negative feelings for family members. In particular, situations such as fathers being unable to support mothers during the process are frequently encountered (Özşenol et al., 2003). The mother states that her husband blames her for the negative aspects of the device. At the same time, he states that he is tired and incapable of being self-sufficient because he has to care for Emre all the time. Mothers of children with disabilities may experience more difficulties than other family members because they are completely involved in the care of their children (Lopez-Wagner et al., 2008).

Emre has used hearing aids for 2.5–3 years. Emre did not see any benefit from the hearing aid. Regarding this, the mother expressed her experiences as follows:

"Two and a half years. Our teacher Kübra always warned us: Emre is not looking. Emre is not looking. I reported this to my wife."

The mother then decided to have cochlear implant surgery for Emre.

Views on the process of getting a cochlear implant

The newborn hearing screening test diagnosed Emre with severe sensorineural hearing loss. The maternal cochlea stated the following regarding the implant decision-making process:

"All of a sudden, my teacher took me upstairs. Emre had such an examination of his ears. Sometimes there was earwax, which they were taking with something, with a device, and he would cry a lot with it. They used to say, We'll take it, Emre; there's nothing we can do. I mean, I said, Ms. Merve, I want her to have surgery. I said it doesn't happen like this; he said, Do you want it? but he said it will be challenging. Let's go, I said I agreed. If he hears it as we do, I said I would agree, so we arranged it immediately."

The mother stated that she decided to have a cochlear implant and convinced her husband as follows:

"My teacher said I don't want it. I mean, how can I give it? he said. I don't work for that much money. I said you would work then. I was a lot too, my teacher. Then I said, I will not listen to you whether you come or not, but I said to disappear in this house when I come. Don't be seen in my eyes; I said everything. Then, on the day of your surgery, my hand and my brother-in-law live there, and they took me to the hospital in Istanbul. I said we, I called, and we went to bed. We're going to have surgery tomorrow; deposit the money."

Numerous research findings in the literature report that the cochlear implant process is performed safely and that the success rate is high (Allen et al., 1998; Hoffman & Cohen, 1995). One of the most important elements of a cochlear implant application is the family's decision. It is important that parents have the appropriate information to base this decision on, which can be highly relevant to the experiences of other parents. Therefore, it is vital to use this experience, use it, and make this information available, considering what is important to parents rather than experts (Archbold et al., 2002). Unfortunately, guidance and information functions are unavailable in most institutions after children are diagnosed with hearing loss. This situation may cause families to be confused about what to do and how to do it, and the prolongation of the process may cause the child to live without auditory input The mother stated that she learned about the cochlear implant from Emre's conversations with the families at the rehabilitation center he attended. Mothers who have had cochlear implant experience before transfer this information to other mothers. This situation needs to be handled more professionally.

Mother's Views on the Process of Learning That the Child Has an Additional Disability

After the cochlear implant surgery, Emre is taken by his mother to the guidance and research center in his province for an educational diagnosis. After the educational evaluation and diagnosis, Emre was diagnosed with hearing loss, autism, and attention deficit and hyperactivity disorder. Regarding this process, the mother says the following:

"I took Emre, sir. They were evaluated there. Then they called me. They asked questions. They told me that Emre has autism and a communicative disability in addition to hearing loss. I was very surprised there, teacher; I did not expect it at all. I was just saying that he doesn't hear, it turns out there are other things too."

As mentioned, families cannot accept the situation after a disability or disability is diagnosed. The mother expressed shock when she first learned of her hearing loss. He expresses that he experiences the same feelings this time because he has an additional disability. In the literature, no research findings have been found on how families react to other disabilities or inadequacies that occur after a disability. Based on this, every disability or disability diagnosis may cause the processes mentioned in the stage model to be experienced by families. We will pay attention to how long it takes for the family to accept the situation and adapt to the first and second feelings.

Mother's views on family life processes after additional disability

The mother expressed the following regarding the process after Emre received additional disability diagnoses:

"Sir, we did not expect it at all. We thought we weren't talking just because he couldn't hear. I said there is something to the teacher, Pınar. But they didn't pay much attention. His father didn't care much for him because he didn't hear it anyway. He is never even in the same room with him, sir. It's going very hard for me. His brother doesn't play with him anymore either."

We mentioned above that fathers are slower to accept their disabled children than mothers. Here, the situation is similar. While the mother offered all kinds of support for Emre, the fact that the father did not care for her supports similar findings. The biggest supporter of the mother in the process is her husband (Köksal & Kabasakal, 2012).

Mothers who cannot get enough support from their spouses generally get support from their own families (Yıldırım & Akçamete, 2014). The mother states that she cannot get enough support from her husband. He states that he received the greatest support from his mother and siblings during the process.

"My sisters, for example, my mother and father said, "If my daughter is going to hear it right away, why are you waiting?" For example, my brother said that if money is money, we will support him."

The mother and her own family were frequently encountered when we went to the home for observations within the scope of the research. This shows that the support of his family continues.

Opinions of the additional disabled child on the effect of the mother's social relations

The mother, Emre, stated that they could not return to their normal lives after being diagnosed with an additional disability and that she now has problems in social relations with relatives and neighbors.

"I couldn't go anywhere to sit. Am I still like that? I am not. I am more comfortable. For example, I go to visit my nephews For example, I sit more comfortably with my sisters and sisters now, my teacher."

There are various research findings stating that families with children with disabilities experience problems in their social relations because of their children (Altuğ-Özsoy et al., 2006; Kurt et al., 2008; Wang & Michaels, 2010; Yıldırım & Akçamete, 2014). Especially mothers with additional disabilities or children with multiple disabilities state that they have problems with their environment and can only go to their own families (Kizir & Tekinarslan, 2018). Here, he can understand from the mother's expressions that he can only go to his sister and mother. Apart from this, it is seen that he cannot maintain positive relations with relatives or neighbors.

Opinions of the mother on the educational processes of a child with an additional disability

The mother expressed her feelings about Emre's education process as follows:

"Sir, we come here on certain days of the week. But I don't know, so I can't say anything if you say we are very good. Omer doesn't make a sound. He attends so many classes, but sometimes he just shouts and calls. But at least there is a language problem, nothing else."

"...and very few teachers are in training. So it seems little to us."

From the mother's statement, it can be interpreted that Emre had expectations that he should at least have literacy experience while he went to school. He thinks that the training is insufficient due to its content and duration. In our country, the number of institutions providing education to children with special hearing loss is quite low. Apart from this, most children are included in inclusive education in special education classes or general education classes. Emre was not accepted to any kindergarten education because he has an additional disability and is receiving supportive education in the rehabilitation center. There are research findings that the education processes of families with additional disabled children are insufficient (Kizir & Tekinarslan, 2018; Yıkmış & Özbey, 2009). Various field experts should act together to meet the educational needs of children with additional disabilities from an early age (Şafak, 2013). Since Emre has been diagnosed with autism and attention deficit and hyperactivity disorder in addition to hearing loss, the education process should be continued in cooperation with a special education teacher, a speech-language therapist, an educational audiologist, and, if necessary, pedagogues. When these multiple obstacles come together, problems such as social skills and early literacy skills that the child should acquire in the early years may cause problems in the future.

Mother's views on the health-related life of the child with an additional disability

The mother expressed the health problems she had and the problems she had experienced with those problems as follows:

"After Emre was diagnosed with ADHD, I did some research. Doctors gave medicine. I am using the medicine. Even though it doesn't seem like much use, I will leave it. I couldn't go for him."

Emre can be very sick. I have to be very careful. He has to be under constant surveillance here and there, in the park, in the shopping center, at school, and by my teacher. There is also a device; if something happens to it, we will have to buy it expensively, again with a lot of expenses. His father sometimes takes him to the park. I call and ask how."

In the mother's statement, she may have problems with Emre himself. Especially families with children with disabilities have mothers, and they complain that they do not have time to breathe and rest because of the constant care of their children (Redmond & Richardson, 2003). In addition, drug treatment applications are widely used in children diagnosed with ADHD (Faraone et al., 2008; Spetie & Arnold, 2007; Tura, 2022).

Mother's Views on Her Life in the Process

The mother has gone through various lives in the process. These experiences are presented in sub-themes as follows:

Regrets of the past

During the interview, the mother stated that she had some regrets about the past, as follows:

"So, master. Sometimes I wish I hadn't gotten married. There are times when I ask myself why. For a while, I was thinking about this often and asking myself."

When this finding is compared with previous research findings, it becomes a finding specific to the current research. When other research findings in the literature are examined, it is seen that parents' regrets are only punishment for an evil they have done long before their child's disability (İçmeli et al., 2008). The mother regrets that her husband left her alone in the process. He states that he finds solutions to all the problems he encounters and receives support from his sisters and mother.

Opinions on financial difficulties

The mother states that she has had a constant problem coping with economic problems since the birth of her child.

"Hodja, my wife, was working with a butcher at first. Already a primary school graduate, I am now a high school graduate. Now he goes to clean the buildings. He's doing it in the doorway, by the way. But he earns very little, my teacher. We need a lot, so it's not enough; I can't get enough."

"The state gives a disability pension to Emre, sir. I'm already trying to meet many of Emre's needs. That is, if we look at my wife, I cannot do anything for the child, my teacher."

Financial difficulties can be a problem experienced by almost all families with disabled children. In most studies, this problem is expressed by families (Akçamete, 2011; Lafçı et al., 2014; Redmond & Richardson, 2003). In our country, a certain monthly salary is paid to families with disabled children by the Ministry of Family and Social Policies. The mother takes the disability pension given to Emre and uses all of this money to meet Emre's needs.

"You already know that this is a high-place village. The nearest place is 15–20 minutes away from the bus. I can walk, but it is difficult for Emre to walk. I also call a taxi sometimes. After all, I'm spending his money on him."

"I get play therapy; Emre has a salary; I pay it from there."

As above, the mother spends all the money given to Emre on things related to Emre.

Opinions on social support

The mother constantly expressed that she wanted to receive psychological support during the process and had self-destructive thoughts related to this.

"Sometimes, that's why I don't want to go anywhere. I've passed it, and I'm not the same anymore. What if those things survive? For example, I wanted to talk to the psychologists, psychiatrists, and psychologists here. Like for myself. He said, "Well, we are looking after the children." A friend of mine said that there is one for adults as well. That said, I do not recommend this place. You went to another doctor, and you went to the hospital, I made an appointment there. That day was also the day of the health professionals, which was not lucky; my teacher and I did not go. I was upset because I was very upset about Ömer, so my teacher. How can I say? I've been acting like this myself; I have a speech disorder. My speech thing is broken. I was talking nervously, and everyone says so. Is it because you don't understand Omer? Is it because it's full now? Said."

"My brother said, for example, that you are speaking very angrily."

"But teacher, sometimes I get full, so I scream. So I'm not hiding it. I'm so bored. So I'm sitting, crying."

"I said if you did what I did, you would commit suicide."

The mother expressed the situation given by the process as above. In particular, you think that suicide is perhaps an expression that should be taken into account. It is stated that mothers who cannot receive social support, especially in families with disabled children, struggle to cope with the problems they experience. As a result, they often manage the process negatively. It was concluded that mothers who received social support were more positive about solving problems (Coşkun & Akkaş, 2009). Families with disabled children in our country need social support occasionally during the process. Social support should include getting information, guidance, and psychological support. Families usually do what they know how to do when they are alone, and this can often cause negativity. The mother made some applications but stated that she could not receive any psychological support. At the same time, it is seen that the support education institution gives no education, such as the family education that Emre went to.

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Conclusion

This study aimed to examine the life story of the mother of a child with additional disabilities such as hearing impairment, autism, and ADHD based on her statements. The data collected for this purpose were analyzed, and findings were obtained in parallel with the literature. As a result, it is surprising that no program or model includes the diagnosis, evaluation, and education processes of children with additional disabilities in our country. Especially if families do not know what to do in this process, it can make the situation even more

difficult. Although families try to find some solutions within their means, these solutions do not help ensure continuity.

Recommendations

The mother stated that the biggest difficulty was that her husband did not support her. Psychological support can be provided, especially to families with disabled children, after the diagnosis, and families can overcome the situation together. Spouse therapies can be organized, and family pieces of training can be planned on which tasks the spouses should do and how.

The mother's lack of knowledge about the additional disability and feeling inadequate about what to do in the process are also supported by other research findings. In this case, the Ministry of National Education and universities can cooperate to train more experts in the field, especially on multiple disabilities. Academics who are experts in multiple disabilities can increase their knowledge through various in-service trainings for teachers working with children with special needs in rehabilitation centers that provide supportive education.

In conclusion, families, especially mothers, state that they need information and social support the most. Having services to inform families about the diagnosis, evaluation, and other processes of children with special needs can help them positively get through the process. The content of social support programs to be offered to families can be further expanded, and support services can be provided to mothers with more experts.

Author (s) Contribution Rate
The authors contributed equally to the paper.

Conflicts of Interest
The authors declare that they have no conflicts of interest.

Ethical Approval (only for necessary papers)
This research was conducted with the permission of the Bolu Abant İzzet Baysal University Human Research Ethics Committee in Social Sciences, with the decision numbered 2022/441 at the 2022/12 meeting dated November 26, 2022.

References

Akçamete, G., (Ed.). (2011). *Özel Gereksinimi Olan Küçük Çocuklar*. (1. Basım) [Young Children with Special Needs. (1st Edition).]Ankara: Nobel

Allen, M. C., Nikolopoulos, T. P., & O'Donoghue, G. M. (1998). Speech intelligibility in children after cochlear implantation. *The American Journal of Otology*, *19*(6), 742-746. https://pubmed.ncbi.nlm.nih.gov/9831147/

Altuğ-Özsoy, S., Özkahraman, Ş., & Çallı, F. (2006). Zihinsel engelli çocuk sahibi ailelerin yaşadıkları güçlüklerin incelenmesi [Review of hardships undergone by families with mentally retarded children]. *Journal of Social Policy Studies, 9*(9), 69-77. https://dergipark.org.tr/tr/pub/spcd/issue/21102/227266

Archbold, S. M., Lutman, M. E., Gregory, S., O'Neill, C., & Nikolopoulos, T. P. (2002). Parents and their deaf child: their perceptions three years after cochlear implantation. *Deafness & Education International*, *4*(1), 12-40. https://doi.org/10.1179/146431502790560962

Bahçıvanoğlu-Yazıcı, A., & Akçin, N. (2014). Çoklu yetersizliği olan çocukların annelerinin çocuklarının gelişimlerine ilişkin görüşlerinin betimlenmesi [Describing mother's opinions about development process of their children with multiple disability]. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi (KEFAD), 15*(2), 335-356. https://dergipark.org.tr/tr/download/article-file/1490009

Barnett, W. S., & Boyce, G. C. (1995). Effects of children with Down syndrome on parents' activities. *American Journal Of Mental Retardation: AJMR, 100*(2), 115-127. https://eric.ed.gov/?id=EJ510104

Bogdan, R., & Biklen, S. K. (1997). *Qualitative research for education.* (third ed.) Boston, MA: Allyn & Bacon.

Bruce, S. M. (2011). Severe and multiple disabilities. In Kauffman, J.M. & Hallahan, D.P. (Ed.) *Handbook of special education* (pp. 291-303). New York and London: Routledge

Cavkaytar, A. (2008). Perspectives of Turkish Mothers on Having a Child with Developmental Disabilities. *International Journal of Special Education, 23*(2), 101-109. https://hdl.handle.net/11421/10776

Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research.* San Francisco: Jossey-Bass

Clandinin, D. J. (2006). Narrative Inquiry: A Methodology for Studying Lived Experience. *Research Studies in Music Education*, *27*(1), 44–54. https://doi.org/10.1177/1321103X060270010301

Clark, R. E., & Drake, R. E. (1994). Expenditures of time and money by families of people with severe mental illness and substance use disorders. *Community Mental Health Journal, 30*, 145-163.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). USA: Sage

Davis, N. O., & Carter, A. S. (2008). Parenting stress in mothers and fathers of toddlers with autism spectrum disorders: Associations with child characteristics. *Journal of Autism and developmental disorders, 38*, 1278-1291. https://doi.org/10.1007/s10803-007-0512-z

Eldeniz Çetin, M. (2013). *Ağır ve çoklu yetersizliği olan bireylerin tercihlerinin değerlendirilmesi ve seçim yapma becerisinin öğretimi [Preference assessment in individuals with profound and multiple disabilities and teaching choice-making].* Eğitim Bilimleri Enstitüsü, Ankara.

Ersoy, A., & Bozkurt, M. (2017). Understanding an elementary school teachers' journey of using technology in the classroom from sand table to ınteractive whiteboard. *International Electronic Journal of Elementary Education, 8*(1), 1–20. Retrieved from https://iejee.com/index.php/IEJEE/article/view/94

Faraone, S. V., Biederman, J., Morley, C. P., & Spencer, T. J. (2008). Effect of stimulants on height and weight: a review of the literature. *Journal of the American Academy of Child & Adolescent Psychiatry*, *47*(9), 994-1009. https://doi.org/10.1097/CHI.ObO13e31817eOea7

Farrell, A. F., & Krahn, G. L. (2014). Family life goes on: Disability in contemporary families. *Family relations*, *63*(1), 1-6. https://doi.org/10.1111/fare.12053.

Gallaudet Research Institute. (2003). *Regional and national summary report of data from the 2002-2003 annual survey of deaf and hard of hearing children & youth*. Washington, DC: GRI, Gallaudet University.

Genç, A. G., Ertürk, B. B. & Belgin, E. (2005). Newborn hearing screening: From the beginning to the present. *Journal of Child Health and Diseases, 48*,109-118. http://www.cshd.org.tr/uploads/pdf_CSH_137.pdf

Giangreco, M.F. (2006). Foundational concepts and practices for educating students with severe disabilities. In M.E. Snell & F. Brown (Eds.). *Instruction of students with severe disabilities* (6th ed., pp. 1-27). Upper Saddle River, NJ: Pearson Education/Prentice-Hall.

Glesne, C. (2013). *Nitel araştırmaya giriş[Introduction to qualitative research].* A. Ersoy ve P. Yalçınoğlu (Çev. Edt.). Ankara: Anı Yayıncılık

Graungaard, A. H., & Skov, L. (2007). Why do we need a diagnosis? A qualitative study of parents' experiences, coping and needs, when the newborn child is severely disabled. *Child: Care, Health and Development, 33*(3), 296-307. https://doi.org/10.1111/j.1365-2214.2006.00666.x

Gray, D. E., & Holden, W. J. (1992). Psycho-social well-being among the parents of children with autism. *Australia and New Zealand Journal of Developmental Disabilities, 18*(2), 83-93. https://doi.org/10.1080/07263869200034841

Güler, A., Halıcıoğlu, M. B. ve Taşğın, S. (2015), *Sosyal bilimlerde nitel araştırma* (2. Baskı). [Qualitative research in the social sciences (2nd Edition)] Ankara: Sözkesen Matbaacılık

Hallahan, D. P., Kauffman, J. M., & Pullen, P.C. (2018). *Exceptional learners: an introduction to special education (14th ed.).* Pearson Education, Inc

Harrison, M., Roush, J. & Wallace, J. (2003). Trends in age of identification and intervention in infants with hearing loss. *Ear and Hearing Issue, 24*(1),89-95. https://doi.org/10.1097/01.AUD.0000051749.40991.1F

Hill, M. G. (2015). *Aklımın aklı: Psikoloji [Psychsmart]* (Translation from 2nd Edition. Mithat Durak, Emre Şenol Durak, Ufuk Kocatepe). Ankara: Nobel.

Hintermair, M. (2000). Children who are hearing impaired with additional disabilities and related aspects of parental stress. *Exceptional Children*, *66*(3), 327-332. https://doi.org/10.1177/001440290006600304

İçmeli, C., Ataoğlu, A., Canan, F. & Özçetin, A. (2008). Comparison of child bringing-up attitudes of families having mentally retarded children and families who have healthy children. *Düzce Medical Journal, 10 (3),*21-28.Retrieved from https://dergipark.org.tr/en/pub/dtfd/issue/48265/610990

İnce, M., & Yıkmış, A. (2021). Opinions and recommendations of academics training special education teachers about applicability of integration in Turkey. *International Education Studies, 14*(11), 54-74. https://doi.org/10.5539/ies.v14n11p54

İnce, M., Kösretaş, B. & Ataman, A.S. (2022, Kasım). *Understanding a mother with a child with special needs: A narrative research "In Memory of the 100th Anniversary of the Great Victory" 4th International Congress of Turkish World Educational Sciences and Social Sciences*, Antalya. https://drive.google.com/file/d/18qfOfIPxIy7qoxGDDovtAJkXYtbNIedo/view

Karabulut, A. & Tavil, Y. Z. (2016). Zihin engellilere kardeş aracılığıyla sunulan öğretim programının oyun kurallarının öğretiminde etkililiği. *Abant İzzet Baysal University Faculty of Education Journal, 16* (3) , 884-901 . Retrieved from https://dergipark.org.tr/en/pub/aibuefd/issue/24917/263018

Karadağ, G. (2009). Engelli çocuğa sahip annelerin yaşadıkları güçlükler ile aileden algıladıkları sosyal destek ve umutsuzluk düzeyleri [Hardships undergone by mothers with handicapped children, hopelessness and social support from family]. *TAF Preventive Medicine Bulletin, 8*(4), 315-322. https://search.trdizin.gov.tr/tr/yayin/detay/96764/

Kearney, P. M., & Griffin, T. (2001). Between joy and sorrow: Being a parent of a child with developmental disability. *Journal of Advanced Nursing, 34*(5), 582–599. http://dx.doi.org/10.1046/j.1365-2648.2001.01787.x

Kemaloglu, Y.K. (2015). Newborn hearing screenings. E. Belgin and A. S. Şahlı (Ed.), in Basic Audiology (p.191-217). Ankara: Güneş Medical Bookstores.

Kizir, M., & Çifci Tekinarslan, İ. (2018).Determining the problems and the methods of coping with the problems of the mothers of children with severe disabilities. *Ankara University Faculty of Educational Sciences Journal of Special Education*, 19(2), 233-256. https://10.21565/ozelegitimdergisi.321683

Köksal, G., & Kabasakal, Z. (2012). The examination of predicting factors of perceived stress of parents with mentally retarded children. *Dokuz Eylul University Buca Faculty of Education Journal,* (32), 71-91. https://dergipark.org.tr/tr/pub/deubefd/issue/25119/265246

Kurt, A. S., Tekin, A., Koçak, V., Özpulat, Ö., & Önat, H. (2008). Zihinsel engelli çocuğa sahip anne babaların karşılaştıkları güçlükler [Living difficulties for parents of children with mental disability]. *Türkiye Klinikleri Journal of Pediatrics, 17*(3), 158-163. https://www.turkiyeklinikleri.com/article/en-zihinsel-engelli-cocuga-sahip-anne-babalarin-karsilastiklari-guclukler-52736.html

Lederberg, A. R., & Golbach, T. (2002). Parenting stress and social support in hearing mothers of deaf and hearing children: A longitudinal study. *Journal of deaf studies and deaf education*, *7*(4), 330-345. https://doi.org/10.1093/deafed/7.4.330

Lopez-Wagner, M., Hoffman, C., D., Sweeney, D., P., Hodge, D., & Gilliam, J. (2008). "Sleep problems of parents of typically developing children and parents of children with autism", *The Journal Of Genetic Psychology, 169* (3): 245-260. https://doi.org/10.3200/GNTP.169.3.245-260

Luijkx, J., Van der Putten, A. A. J., & Vlaskamp, C. (2017). Time use of parents raising children with severe or profound intellectual and multiple disabilities. http://doi:10.1111/cch.12446

McIntyre, L., Kraemer, B. R., Blacher, J., & Simmerman, S. (2004). Quality of life for young adults with severe intellectual disability: Mothers' thoughts and reflections. *Journal of Intellectual and Developmental Disability, 29*(2), 131-146. https://eric.ed.gov/?id=EJ681075

Mencap. (2001). *No ordinary life: The support needs of families caring for children and adults with profound and multiple disabilities.* London: Royal Society for Mentally Handicapped Children and Adults.

Moeller, M. P., Hoover, B., Peterson, B., & Stelmachowicz, P. (2009). Consistency of hearing aid use in infants with early-identified hearing loss. *American journal of audiology*, *18*(1), 14-23. https://doi.org/10.1044/1059-0889(2008/08-0010)

Nakken, H., & Vlaskamp, C. (2007). A need for a taxonomy for profound intellectual and multiple disabilities. *Journal of Policy and Practice in Intellectual Disabilities, 4,* 83–87. https://doi.org/10.1111/j.1741-1130.2007.00104.x

O'Shea, D. J., & Hammitte, D. J. (2001). *Families and teachers of individuals with disabilities: Collaborative orientations and responsive practices.* Allyn & Bacon.

Özşenol, F., Işıkhan, V., ve Ünay, B. (2003). The evaluation of family functions of families with handicapped children., *Gülhane Medical Journal, 45* (2): 156-164. https://search.trdizin.gov.tr/tr/yayin/detay/20860

Redmond, B., & Richardson, V. (2003). Just getting on with it: Exploring the service needs of mothers who care for young children with severe/profound and life-threatening intellectual disability. *Journal of Applied Research in Intellectual Disabilities, 16*(3), 205-218. https://doi.org/10.1046/j.1468-3148.2003.00165.x

Sardohan-Yıldırım, E. S., & Akçamete, G. (2014). Determining the difficulties faced by mothers of children with multiple disabilities in the process of early childhood special education services. *Cumhuriyet International Journal of Education*, *3*(1), 74-89. https://doi.org/10.30703/cije.321336

Sardohan-Yıldırım, A.E., & Vezne, R. (2022). A Family Education Intervention for Parents Having Children with Multiple Disabilities during COVID-19. *International Journal of Contemporary Educational Research, 9*(1), 179-190. https://doi.org/10.33200/ijcer.1004241

Seltzer, M. M., Greenberg, J. S., Floyd, F. J., Pettee, Y., & Hong, J. (2001). Life course impacts of parenting a child with a disability. *American Journal On Mental Retardation, 106*(3), 265-286. https://10.1352/0895-8017(2001)106<0265:LCIOPA>2.0.CO;2

Seggie, F. N. ve Bayyurt, Y. (2015). *Nitel Araştırma Yöntem, Teknik, Analiz ve Yaklaşımları.* [Qualitative Research Methods, Techniques, Analysis and Approaches]. Ankara: Anı Yayıncılık.

Sloper, P., & Turner, S. (1992). Service needs of families of children with severe physical disability. *Child: Care, Health and Development, 18*(5), 259-282. https://doi.org/10.1111/j.1365-2214.1992.tb00359.x

Şafak, P. (2013). *Ağır ve çoklu yetersizliği olan çocukların eğitimi* [Education of children with severe and multiple disabilities] (2. baskı). Ankara: Vize Yayıncılık.

Şen, E. (2004). *Engelli çocuğu olan ailelerin yaşadığı güçlükler [Difficulties of families with disabled child]* (Unpublished master's thesis, Mersin University, Institute of Health Sciences, Mersin, Turkey). Retrieved from http://tez.yok.gov.tr/UlusalTezMerkezi. (Thesis Number 156345)

Tadema, A. C., & Vlaskamp, C. (2010). The time and effort in taking care for children with profound intellectual and multiple disabilities: A study on care load and support. *British Journal of Learning Disabilities, 38*, 41–48. https://doi.org/10.1111/j.1468-3156.2009.00561.x

Tura, G. (2022). The Effect of Psychoeducation Program Based on Structural Family System Therapy on Family Functionality in Families of a Child Diagnosed with Attention Deficit Hyperactivity Disorder. *International Journal of Contemporary Educational Research, 9*(1), 164-178. https://doi.org/10.33200/ijcer.1026579

Van Timmeren, E. A., Van der Putten, A. A. J., Schrojenstein Lantman-de Valk, H. M. J., Schans, C. P., & Waninge, A. (2016). Prevalence of reported physical health problems in people with severe or profound intellectual and motor disabilities: A cross-sectional study of medical records and care plans. *Journal of Intellectual Disability Research, 60*, 1109–1118. http://doi:10.1111/jir.12298

Wake, M., & Carew, P. (2016). Science, not philosophy, will help deaf and hard-of-hearing children reach their potential. *Pediatrics, 137*(1), e20153443. https://doi.org/10.1542/peds. 2015-3443.

Wang, P., & Michaels, C. A. (2010). Chinese families of children with severe disabilities: Family needs and available support. *Research and Practice for Persons with Severe Disabilities, 34*(2), 21-32. https://doi.org/10.2511/rpsd.34.2.21

Westling, D., & Fox, L. (2009). *Teaching students with severe disabilities* (3rd ed.). Upper Saddle River, NJ: Merrill.

Yıkmış, A., & Özbey, F. Y. (2009). Otistik çocuğa sahip annelerin çocuklarının devam ettiği rehabilitasyon merkezlerinden beklentilerinin ve önerilerinin belirlenmesi [Define the expectations of mothers whose autistic children attends to a rehabilitation center]. *International Online Journal of Educational Sciences, 1*(1), 124-153. https://www.ajindex.com/dosyalar/makale/acarindex-1423904513.pdf

Yıldırım, A., & Şimşek, H. (2021). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri* (12 baskı) [Qualitative Research Methods in Social Sciences](12th ed.) Seçkin. Ankara

Zaidman-Zait, A. (2007). Parenting a child with a cochlear implant: A critical incident study. *Journal of Deaf Studies and Deaf Education*, *12*(2), 221-241. https://doi.org/10.1093/deafed/enl032

A Review on the Opinions of Teachers on Refugee Children's Social Skills

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Abstract

This research aims to analyze the opinions of primary school teachers on the social skills of refugee students. The case study method from qualitative research designs was used in the research. Within the scope of the research, interviews were conducted with 22 primary school teachers who have knowledge about the concept of social skills, who work in Sivas, which was selected with regard to the method of convenience sampling, and who have refugee students in their classes, which was selected with regard to the method of criteria sampling. Data were collected using semi-structured interview and observation forms. The descriptive analysis method was used in the analysis of the data. As a result of the research, it was observed that refugee students have language problems and are shy and introverted. It was determined that the communication and social skills of the students are weak, yet they obey school and classroom rules. The number of teachers who stated that refugee students' ability to solve the problems they face is sufficient and the number of teachers who stated that refugee students' ability to solve the problems they face is not sufficient are very close to each other. While the teachers state that they do not do any extra exercise in the classes to increase the social skills of refugee students and that they do not find themselves competent as they do not have knowledge on this subject, they also suggest that students learn Turkish before they attend school. By the research results, it can be recommended to provide in-service training to teachers, to support teachers, and to teach Turkish to refugee students.

Keywords: Refugee students, Social skills, Refugee problems.

Introduction

People might be obliged to migrate to other places or other countries for various reasons. Some of these people migrate in order to obtain better living conditions, while others migrate due to reasons such as natural disasters, terrorism, and war (Başar et al., 2018). As a matter of fact, there are approximately 4 million refugees and asylum seekers in Turkey, which is one of the countries affected by this type of migration (United Nations High Commissioner for Refugees [UNHCR], 2020). It is known that these refugees and asylum seekers in Turkey have difficulties adapting to their environment and establishing social relations.

In recent years, it has been observed that the number of refugee students in our country has increased considerably (Yılmaz, 2020). It is seen that these refugee students have many problems with regard to education. These problems are related to language, adaptation to school, inability to communicate with parents, low socioeconomic level, and exposure to peer bullying (Agcadağ Çelik, 2019; Aktın, 2018; Aykut, 2019; Erdem, 2017; Er & Bayındır, 2015; Kultaş, 2017; Levent & Çayak, 2017; Şeker & Aslan, 2015; Yavuz & Mızrak, 2016). Also, it can be thought that refugee students have experienced many traumatic events, which may prevent them from socializing (Barrett & Berger, 2021). Another way refugee student can achieve academic success is to socialize with their peers (Karkouti et al., 2021). In addition, refugee students are also exposed to peer bullying at school (Bešić et al., 2020).

The adaptation of the individual to the society in which he or she lives is among the main aims of education. The realization of this adaptation depends on the social skills of the individual (Çubukçu & Gültekin, 2006). Although there is no accepted definition of social skills (Denham et al., 2006), Gresman (1985) defined social skills as a child's ability to interact appropriately with her or his peers and adults. Social skills training, on the other hand, is a psychological intervention focusing on the development or improvement of social interaction, social performance, or interpersonal skills (Turner et al., 2018).

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Social skills ensure that relationships established between people are healthy (Samancı & Uçan, 2017). It is necessary and important for children to acquire these skills (Gresham, 2016; Little et al., 2017). In this respect, social skills play an important role in the acquisition of basic knowledge, skills, and habits in the primary school period (Çubukçu & Gültekin, 2006). Acquiring social skills also contributes to the success of students in the education process (Field, 2003). In light of the relationship between social skills and academic outcomes, effective teaching and intervention for students with social skill deficits is critical (McDaniel et al., 2017). Most of the students who are regarded as disadvantaged in acquiring social skills are refugee students (Fazel & Stein, 2002). Especially for refugee children, it is a difficult process to adapt to the education system and social structure of the new society (Emin, 2019). Refugee students, in particular, need social interactions. It can be said that by meeting these needs, cognitive, affective, and language skills can also develop (Biasutti et al., 2020). Schools are essential for the socialization of refugee students (Baak, 2019).

In the studies conducted about refugee students, it is observed that education contributes to the individual and social development of children. For this reason, it is highly important to analyze the situations with respect to the adaptation of children to school and to determine the factors affecting their adaptation to school (İzol, 2019). As one of these factors is social skills (Çubukçu & Gültekin, 2006), it is considered important to conduct research on the social skills of refugee students. When the literature is analyzed, it is observed that there are studies on topics such as refugee children's language development (Ataseven, 2019), school adaptation (Aykut, 2019), and participation in education (Kranrattanasuit, 2020; McIntyre & Hall, 2020; Meda et al., 2012; Mwangi, 2014; Ndijuye & Rao, 2018). However, a study analyzing the social skills of refugee students in terms of the opinions of primary school teachers has not been found. In the study, it was also effective and important that the classroom teachers had experience teaching Turkish, especially in the selection of primary school fourth-grade students. Because if we consider that classroom teachers are more experienced in teaching literacy than other branch teachers, refugee students can be considered advantageous in learning Turkish. The social skills of refugee students learning Turkish may be easier to interpret. By considering the level of social skills of refugee students in their educational environments, this study aims to analyze the opinions of primary school teachers on the social skills of refugee students. We sought answers to the following questions in line with this purpose:

- What is the general state of refugee students?
- How are the relationships of refugee students with their friends and teachers?
- What are the communication skills of refugee students?
- Are refugee students able to express themselves effectively?
- What are the problem-solving skills of refugee students?
- Do refugee students behave in line with the rules?
- What are the social skills of refugee students?
- What kinds of activities are carried out by teachers to improve the social skills of refugee students?
- What should be done to improve the social skills of refugee students?
- Are teachers competent enough to improve the social skills of refugee students?

Method

Research Model

The case study method from qualitative research designs was used in the research. In the case study design, the factors related to a case are studied with a holistic approach, and how they affect the situation and how they are affected by the situation are focused on (Yıldırım & Şimşek, 2018). A case study is a qualitative approach in which detailed information is collected, and a situation is described by using more than one source of information about a current situation in real life or multiple situations at a particular time (Creswell, 2021). Within the scope of the case study design, their opinions on the social skills of refugee students were obtained from 22 primary school teachers in this research.

Study Group
Within the scope of the research, interviews were conducted with 22 primary school teachers who have knowledge about the concept of social skills and who have refugee students in their classes, which were selected with regard to the method of criteria sampling. According to the method of criteria sampling, on the other hand, the participant is determined in accordance with the designed criteria (Yıldırım & Şimşek, 2018). The professional seniority of the participants varies between 1 and 40 years. The majority of these participants stated

that they have taught refugee students for four years or less. In addition, there are participants who have taught refugee students for more than five years.

Data Collection Tools
Research data were collected through a semi-structured interview form developed by the researchers. Interviews are conducted with people to reveal things we cannot directly observe. The purpose of these interviews is to reach the perspective of other people (Patton, 2018). Qualitative researchers may formally interview participants as part of their data collection efforts. In a structured interview, the researcher has a specific set of questions that elicit the same information from the respondents (Gay et al., 2012). Interview questions were created by scanning the literature in detail, and to ensure the validity of the form, expert opinions were received from two researchers working with refugee children and two independent researchers with qualifications in qualitative design. In the final version of the form, a semi-structured interview form consisting of ten open-ended questions was created. The pilot scheme of the research was conducted by interviewing three participants.

Within the scope of the research, an observation form was created by the researchers to support the opinions of teachers. In unattended observation training, students do not participate in the activity they observe but rather travel "on the sidelines"; they are not directly involved in the situation they observe (Fraenkel et al., 2012). While creating the observation form, the Student Observation Form of the Directorate General for Special Education and Guidance Services of the Ministry of National Education (https://orgm.meb.gov.tr/meb_iys_dosyalar/2017_08/08142123_YYRENCY_GYZLEM_KAYDI.pdf) and the observation form prepared by Ergin and Dişçi (2018) were used. The draft observation form, consisting of two categories with 20 items in total, was prepared in line with expert opinions. Although the observation form consists of two dimensions, it has 20 items. It consists of two dimensions: communication skills and the ability to act according to the rules. Observations were made at the beginning, middle, and end of the semester. The items in the form are marked as yes or no and include a section that will be accompanied by an explanation if necessary.

Data Collection
Data were collected through interviews carried out with 22 participants working in primary schools in the city center of Sivas. In interviews, questions were directed to the participants in a certain order because, according to Patton (1987), each interviewee should be asked questions in the same style and in the same order. Interviews were recorded using a technological device. In addition, in order to support the opinions of teachers, an observation about the social skills of refugee students was made by five teachers and one researcher who were interviewed. The observation form consists of three stages. These stages cover three different time periods, namely the beginning of the semester, the middle of the semester, and the end of the semester. The teachers and the researcher filled out the relevant form by making observations about the social skills of the students at these three different stages.

Data Analysis
The descriptive analysis method was used in the analysis of the data. In this approach, the aim is to present the data obtained as a result of interviews and observations to the reader in an organized and interpreted way. Data are classified, summarized, and interpreted in accordance with themes determined before. A cause-and-effect relationship is established between findings, and, if necessary, comparisons are made between cases (Yıldırım & Şimşek, 2018).

In order to ensure external reliability in the research, detailed explanations about the teachers participating in the research were included, and to ensure internal reliability, the data were coded separately by two different coders, one of whom was the researcher. The reliability formula suggested by Miles and Huberman (1994) (Reliability=the number of agreements/ (number of agreements + number of disagreements)) was used to calculate the inter-coder agreement percentage, and reliability was calculated as 92%. This result proves that the reliability of the coded data is sufficient (Miles & Huberman, 1994). Pseudonyms given to the participants were used in the direct quotations provided in the presentation of the data.

Findings

The opinions of the teachers on the general evaluation regarding the refugee students are given in Table 1.

Table 1. General Evaluation Regarding the Refugee Students

Evaluation	Teacher	f
There are individual differences	Ayşe, Mehmet, Nur, Nazan, Veli, Zeynep, Merve, Faik	8
Adapts over time	Ayşe, Hülya, Mutlu, Nur, Nazan, Zeki, Deniz, Dilek	8
There is a language problem	Ayşe, Hakan, Musa, Nur, Halis, Deniz, Dilek	7
Knows Turkish	Gamze, Hülya, Yeliz, Ahmet	4
Shy, introverted	Emre, Hakan, Halis	3
Well adjusted	Emre, Latif, Vildan	3
There is a problem with distance education.	Mutlu, Nazan	2
Reluctant in classes	Latif, Halis	2
Cannot express her/himself	Musa	1
Unsuccessful	Musa	1

When Table 1 is analyzed, the participants emphasize that there are individual differences between students. Most of the participants stated that they had had problems with the refugee students in the beginning, but the problems decreased over time as other students also accepted refugee students. It was stated that the primary school teacher has an important role in ensuring adaptation between refugee students and other students. In addition, the language problem and the fact that even families do not know Turkish are among the important problems. Some of the participants' opinions on this issue are as follows:

Faik: "I have two students. They are very different from each other. One is very shy, and the other is very sociable. Even the social one was texting so constantly that it became uncomfortable for me."
Musa: "They were crying silently. They cannot express themselves. Their success level is low because they do not know the language."
Hakan: "They do not speak Turkish, they feel alienated. The family does not speak Turkish. She and her family are shy."
Ayşe: "We had difficulties in the beginning. Language is the biggest issue."

The opinions of the teachers on the relationship between the refugee students and their friends and on the relationship between the refugee students and their teachers are given in Table 2.

Table 2. Relationship of the Refugee Students with Their Friends and Their Teachers

Social relations	Teacher	f
Only speaks when asked a question	Emre, Latif, Musa, Mutlu, Halis, Merve, Dilek	7
Has limited relationships with other students	Musa, Mutlu, Veli, Zeynep, Deniz, Ahmet	6
Has good relationship with teacher	Gamze, Nazan, Zeki, Vildan, Faik	5
Has good relationship with friends	Gamze, Nazan, Zeki, Vildan, Merve	5
Initially timid and then better in her/his relationships	Ayşe, Hülya, Yeliz, Deniz, Faik	5
Has no relationship with the teacher	Hakan, Veli	2
Constantly argues with her/his friends	Hakan	1

When Table 2 is analyzed, it can be stated that the refugee students have weak social relations. The majority of the participants stated that the refugee students only answered questions when asked. It was stated that these students isolate themselves, do not participate in other students' games, and exhibit timid attitudes, especially when they are first introduced to the classroom. However, there are opinions revealing that the refugee students establish better relations with their teachers and friends as they start learning Turkish. The opinions of the participants on the subject are as follows:

Mutlu: *"She was shy in her or his relationship with me because of her or his lack of self-confidence. He or she cannot openly express any of her or his problems. He or she only talks to one of her or his friends in the class and not much to the others. S/He does not participate in games much."*
Veli: *"S/He does not speak at all. I include her or him in the games, but then I see s/he is gone. Other children do not communicate either."*
Ayşe: *"These students are shy in the beginning. But as they learn Turkish and begin to understand what we are saying, we can communicate."*

In addition to these opinions of the teachers, as a result of the observations made, it was observed that the refugee students generally had poor relations with their friends and teachers at the beginning of the semester,

that some of them started playing games by making friends in the middle of the semester, and that some of them were able to make friends at the end of the semester. It is also among the observation results that, while the refugee students had been excluded at the beginning of the semester, they had many friends who wanted to sit with them at the end of the semester.

The opinions of the teachers on the communication skills of the refugee students are given in Table 3.

Table 3. Communication Skills of the Refugee Students

Communication skills	Teacher	f
Shy because of a language problem	Musa, Faik, Nur, Yeliz, Vildan, Deniz, Latif	7
The ones speaking Turkish are good, sociable	Dilek, Veli, Gamze, Halis, Emre, Nazan	6
Some are shy and introverted, some are sociable	Ayşe, Veli, Zeynep, Ahmet, Merve	5
Communicates in time	Zeki, Mutlu	2
Girls are more talkative than boys	Mehmet	1
Afghans are more sociable than Syrians	Hülya	1

When Table 3 is analyzed, most of the participants stated that the refugee students are shy because they have language problems. The most effective factor in deciding whether the communication skills of these students are strong or weak depends on their knowledge of Turkish. Participants drew particular attention to individual differences between refugee students. Individual differences between these students are due to their personality traits, their gender, and the countries they come from.

In addition, some participants stated that the communication skills of the students are directly related to their families. According to the participants, attitudes of families, socioeconomic level, and the state of adaptation to the country are considered factors affecting the students. Some opinions on the subject are as follows:

Nur: *"Language is the most important element that awakens a person's sense of belonging to a country and enables one to adapt to that land. The language problem unfortunately alienates these children from us."*
Veli: *"There are those who are very good, those who learn Turkish, those who are at an intermediate level, and those who do not communicate at all."*
Zeynep: *"Her or his communication skills are very good. The fact that a student's parents are literate, or that they are primary, secondary, or high school graduates, makes a lot of difference in children."*

Regarding this finding, it was observed that the communication skills of the refugee students were quite weak at the beginning of the semester. It was observed that some students communicate with their friends and teachers in the middle of the term, while others do so at the end of the term as they learn the language. It is among the observation results that there are students whose voices have not been heard for months, but these students started speaking as they learned the language.

The opinions of the teachers regarding the self-expression skills of the refugee students are given in Table 4.

Table 4. Self-Expression Skills of the Refugee Students

State of self-expression	Teacher	f
Cannot express her/himself because s/he does not know Turkish	Nur, Hakan, Latif, Musa, Ahmet, Faik	6
Those who know the language can express themselves, those who do not know cannot	Ayşe, Mehmet, Veli, Zeynep	4
Cannot express her/himself because s/he is introverted	Ayşe, Nur, Yeliz, Ahmet	4
Can express her/himself very comfortably	Gamze, Zeki, Halis, Vildan	4
Expresses because s/he knows Turkish	Nazan, Gamze	3
Has problems because s/he does not have proficiency	Hülya	
They are shy because they have language problems	Ayşe, Merve	2
Afghans express themselves better than Syrians	Mehmet, Zeki	2
Expresses her/himself in time	Deniz, Dilek	2
Those who do not know the language use translators	Veli	1
Answers only when asked	Emre	1
Those who do not know the language use body language	Zeynep	1

When Table 4 is analyzed, it is stated by the participants that most of the students have problems expressing themselves. The fact that refugee students do not know Turkish is shown as the biggest reason for this situation. Looking at the table, it is observed that introverted and shy students have problems expressing themselves. Refugee students' shyness and isolation from other students are considered obstacles to expressing themselves.

The fact that families do not speak Turkish at home and that some students do not make the necessary efforts to learn Turkish are among the factors affecting refugee students' ability to express themselves. In addition, the teachers stated that Afghan students are better adapted to society than Syrian students and thus express themselves better. Looking at the table, it is observed that there are also refugee students who express themselves very comfortably. The reason for this situation may be that these students know Turkish. In addition, the students develop various methods to express themselves. These methods are stated as using an interpreter and body language. Statements from the teachers supporting this issue are given below:

Zeynep: *"S/He does not know Turkish, but the child says something by using her/his hand, arm, and objects."*
Musa: *"They cannot express themselves since they do not know Turkish."*
Ahmet: *"Actually, her or his Turkish is not bad, but the child is introverted as a person. It is clear when s/he speaks. But s/he seems afraid to speak."*

According to the results of the observations made, it was observed that at the beginning of the semester, some refugee students did not speak at all, while others only spoke in their own language with other refugee children like themselves. It was observed that some students who knew Turkish talked to their friends and teachers even at the beginning of the semester. It was also observed that the students who had not expressed their feelings and thoughts at the beginning of the semester started expressing themselves at the end of the semester.

The opinions of the teachers on the problem-solving skills of the refugee students are given in Table 5.

Table 5. Problem-Solving Skills of the Refugee Students

Problem-solving skills	Teacher	f
Cannot solve her/his problems because s/he is introverted	Ayşe, Mehmet, Musa, Ahmet, Deniz, Faik, Dilek	7
Solves problems by getting support	Mutlu, Nazan, Zeki, Halis	4
Can solve her/his problems because s/he knows Turkish	Vildan, Gamze, Merve	3
Can solve her/his problems because s/he adapts	Emre, Mehmet, Veli	3
Tries to solve her/his problems with violence	Zeynep, Nur	2
We had no problems but I do not know her/him enough	Latif, Hakan	2
Introverts cannot solve their problems, sociable ones can.	Hülya	1
Started to solve her/his problems in time	Yeliz	1

When Table 5 is analyzed, it is seen that, according to the participants, the fact that the refugee students are shy and introverted, as well as feeling alienated, causes them to be inadequate in solving the problems they face. Some participants stated that the refugee students solve their problems by asking for help from different people, such as their teachers, friends, and school management. It was stated that the students who can solve their problems have high self-confidence, are sociable, do not distinguish themselves from Turkish students, and can speak Turkish. In addition, the participants emphasized that some students resorted to violence to solve problems. However, there are also opinions stating that this situation was brought under control over time. The opinions of some teachers on the subject are as follows:

Zeynep: *"Some of them are too violent. They go for everyone's throat as a defense mechanism. I was mad at this kid, but it did not work. Then I tried a different method. I showed the child constant attention and love. Her or his attitude towards her or his friends has changed a lot. I gave awards and took her or him around with me. He felt that he was valuable. His tendency for violence was so great that I was afraid he would kill someone one day. Now, s/he talks with her/his friends in a very nice manner; s/he thanks."*
Musa: *"There was another kid taking her or his lunchbox. S/He did not tell me that; he was crying all the time. I found that out months later."*
Nazan: *"S/He knew that s/he could go to the teacher when s/he had a problem and that s/he could go to the hall monitor when it was break time."*

According to the results of the observations, it was observed that the refugee students became more successful in solving the problems they faced over time. For example, it was observed that in the middle of the semester, when a student was criticized by his or her friends for forgetting to raise her or his fingers, s/he said, "I can forget sometimes, but I am learning." On the other hand, it was stated that some of these students still could not solve their problems even at the end of the term. It was observed that there was one student who intervened between her or his friends while standing in line at the canteen, and as a result, the refugee student returned

without receiving anything. It was also observed that some of these students had shown violence to their friends when they had a problem at the beginning of the semester, but this tendency to violence disappeared at the end of the semester.

The opinions of the teachers regarding whether the refugee students obey the rules or not are given in Table 6.
Table 6. Behaviors of the Refugee Students Regarding Obeying Rules

Do they obey the rules?	Teacher	f
Obeys the rules such as class entry and exit timings, raising hands and taking permission	Musa, Halis, Hakan, Mutlu, Vildan, Emre	6
As s/he adjusted, s/he learned the rules of the classroom and school over time	Nazan, Veli, Zeki, Zeynep, Hülya, Deniz	6
Follows the teacher's instructions and obeys the rules	Yeliz, Gamze, Musa, Merve	4
Acts mousily, waiting for the teacher's command	Latif, Faik	2
Does not obey the rules regarding school attendance and course entry-exit timings.	Nur, Dilek	2
Afghans obey the rules more than Syrians do.	Mehmet	1

When Table 6 is analyzed, it is seen that most of the participants stated that the refugee students obey the rules. It was stated that these students take permission when they need to use the restroom, ask to speak by raising their hands, do not throw rubbish on the floor, pay attention to the entrance and exit timings of the class, and do not talk among themselves during the lesson. It was explained that some students did not know the classroom and school rules in the beginning but learned them over time. Some participants indicated that if the classroom and school rules are explained appropriately, these students will obey the rules. There are also teachers who stated that there were students who did not obey the rules. It was also stated that Afghan students generally obey the school and classroom rules more than Syrian students. The opinions of some teachers on the subject are as follows:

Emre: *"S/He is very good. I would even say better than others. S/He is very good during classes. Just as we want. S/He speaks when I say 'speak', s/he keeps quiet when I say keep quiet. S/He gets up when I say get up."*
Nur: *"S/He does not obey the rules. The biggest problem in our school, especially for relatives and immigrant families staying in the same house, is that students come to school late."*
Deniz: *"For example, s/he used to stand up and walk around the classroom without permission. S/He got used to the rules over time. We experienced the same thing with many rules. S/He used to speak without raising a hand. I always warned in a nice way. Then s/he started acting in accordance with the rules."*

According to the results of the observation, it can be concluded that the refugee students generally had not raised their hands at the beginning of the semester, yet they mostly started to speak by raising their hands in the middle of the semester. The reason why the students had not raised their hands at the beginning of the semester was that they had not spoken Turkish at all and had not known the rules. It was deduced that the behavior of walking around the classroom during lesson time, which had been a problem encountered at the beginning of the semester, disappeared through the middle of the semester. It was also observed that the refugee students mostly threw their trash in the trash even at the beginning of the semester, yet some of them had put the trash of their sharpened pencils on their desks. However, it also changed through the middle of the semester as they stopped keeping pencil trash on their desks and started using rubbish bins. It was revealed that the refugee students observed did not damage any classroom or school belongings. Also, according to the results, it was observed that most refugee students did not come to the classes on time at the beginning of the semester as well as in the middle and end of the semester. Some of them were 15 minutes late, while others were late for up to one class period. The reasons for this are that the family is indifferent to their child and that both parents work. In addition, it was observed that the majority of refugee students did not complete their homework. This problem could not be solved even at the end of the semester.

The opinions of the teachers on the social skills of the refugee students are given in Table 7.
Table 7. Social Skills of the Refugee Students

Social skills	Teacher	f
Take part in activities, go to the canteen with friends, and play games	Mehmet, Zeynep, Ahmet, Deniz	4
Their skills are weak, and they expect socialization from the	Musa, Vildan, Hülya, Halis	4

Social skills	Teacher	f
opposite party		
Although they do not speak the language, they build up friendships	Hakan, Latif	2
Avoid activities and do not take part in friendships	Ayşe, Merve	2
Have good social skills and be sociable	Nazan, Zeki	2
Have good relationships with their friends	Gamze, Faik	2
Started building up friendships over time	Yeliz, Dilek	2
Establish a relationship with a few people; do not go out of that	Mutlu	1
Close with those who are like themselves; do not build friendships with others	Nur	1
Afghans have very good social skills; they are very enthusiastic and good at activities	Veli	1
No socialization, as time was short	Emre	1

When Table 7 is analyzed, it is observed that some participants stated that the refugee students participate in activities, play games with their classmates by establishing relationships with their friends, and go to the canteen and shop with them. On the other hand, a number of participants stated that some students have weak social skills. They explained this situation as such: refugee students cannot build friendships but mostly wait for the first step from the other party. In addition, it was also stated that the refugee students avoid participating in activities organized in the school and classroom. Apart from that, some participants claimed that Afghan students are more enthusiastic than Syrian students in terms of social skills.

Mutlu: *"S/He is still shy. There are three students s/he talks in the class. S/He especially plays with these three friends, not with the others. S/He watches the others but does not play with them."*
Mehmet: *"They talk to other students. They can shop with them, go to the canteen together, play together in the hallway, and they can even go and show what they do to their friends who sit in front of or behind them while there is any activity in the classroom."*
Merve: *"I prepare group activities for them to get together. But they do not participate at all. They cannot even make friends. They do not even talk to the students I have grouped them together."*

According to the observations carried out, the social skill levels of the refugee students vary by their level of Turkish, their adaptation to the school, their relationships with their friends, and their compliance with the rules. For instance, it is among the observation results that the refugee students who had not had friends at the beginning of the semester and could not speak much started making friends as they learned Turkish and started using courtesy expressions to their friends such as 'thank you' and 'I am sorry'.

The opinions of the participants regarding the activities carried out by the teachers to improve the social skills of refugee students are given in Table 8.

Table 8. Activities Carried Out to Improve the Social Skills of the Refugee Students

Things done to improve social skills	Teacher	f
I do not carry out extra activity	Ayşe, Gamze, Latif, Musa, Mehmet, Mutlu, Nazan, Yeliz, Zeki, Deniz, Ahmet, Merve, Faik	13
I make them play games	Emre, Hakan, Veli, Halis	4
I give simple in-class tasks	Nur, Zeynep, Dilek	3
I make them have short interviews	Hülya	1
I visit homes	Halis	1
I make them perform theatre plays	Vildan	1
Box of Kindness project	Vildan	1

When Table 8 is analyzed, it is clear that most of the participants stated that they did not include any extra activity for the improvement of the refugee students' social skills. The teachers stated that they make the refugee students do the same activities and practices which they make other students do in the classroom. Some teachers explained this situation by stating that they did not think there was a need for separate activities special for the refugee students, on the contrary, they emphasized that this should be a natural development process that all students shall be involved in. On the other hand, some teachers stated that they gave these students simple tasks such as preparing boards and distributing photocopies in the classroom while some others stated that they wanted to improve social skills of these students with different type of games such as snatching handkerchief. One of the teachers stated that she made refugee students have interviews by giving them the role of journalists. Opinions of some teachers on the subject are as follows:

Ayşe: *"Whatever we do with our students, we try to include them. We do not have any extra activity."*
Mutlu: *"I did not do any other activity. I did not need this because I think her/his development is normal. We have the same type of students in the classroom who are not even refugees. But they can be different in the environment of friends, in the classroom, or in the garden. We can see that more actively."*
Veli: *"For example, we have games in physical education classes such as snatching handkerchief. I make them play these games."*

The opinions on the suggestions of the participants to increase the social skill levels of the refugee students are given in Table 9.

Table 9. Suggestions to Increase the Social Skill Levels of Refugee Students

Things to do to increase social skills	Teacher	f
Turkish should be taught	Ayşe, Hakan, Latif, Musa, Nur, Nazan, Zeki, Halis, Ahmet, Merve, Faik, Dilek	12
The family should be educated	Emre, Gamze, Hülya, Musa, Nur, Zeki, Ahmet, Faik	8
A separate education should be provided before participating in school	Hülya, Musa, Nazan, Faik, Dilek	5
Various courses should be provided	Ayşe, Zeynep, Ahmet, Merve	4
They should be informed about their environment	Nur, Deniz	2
Guidance should be provided first	Nur, Halis	2
A sense of belonging should be gained, and inclusiveness should be ensured	Ayşe, Halis	2
Other institutions should be involved in the process	Veli	1
Theater plays should be performed	Vildan	1

When Table 9 is analyzed, it is obvious that most of the participants stated that Turkish should be taught to these refugee students first in order to increase their social skills. In addition to this, most of the participants claimed that the family factor is also effective in improving the social skills of refugee students because it was stated that some families did not allow their children to participate in social activities due to economic reasons or prejudices. Moreover, some participants stated that the entire burden of the education of the refugee students is on their shoulders, and they are left alone in this regard. Therefore, it was emphasized that these students should be prepared for the normal educational process by receiving training beforehand in separate classes. Some participants expressed that it is necessary to provide students with a sense of belonging and integrate them into society. Expressions emphasizing that other institutions should have an active role in the education process of refugee students also come to the fore. The opinions of some teachers on the subject are as follows:

Veli: *"It does not work only with teachers. School administration and authorized units also need to take some responsibility."*
Nur: *"First of all, refugee students should be provided education to learn Turkish."*
Musa: *"They need to develop more language skills and get to know our country. I believe that once both the family and child are provided with the necessary information about the school, they will be successful."*
Vildan: *"I prepare drama activities for students. They like it very much. In the beginning, they did not want to participate, but now they are very willing, even when casting roles. After a while, I noticed that they also improved their friendship relations."*

The opinions of the teachers on their own efficacy in increasing the social skill levels of the refugee students are given in Table 10.

Table 10. Opinions of Teachers on Their Own Efficacy

Do you find yourself competent?	Teacher	f
I am incompetent due to a language problem	Deniz, Hakan, Latif, Merve	4
I am incompetent for time-related reasons	Veli, Zeynep, Gamze	3
I am competent because I have good communication with students	Halis, Mutlu, Yeliz	3
I am incompetent because I do not know how to approach refugee students	Musa, Nur, Faik	3
I am competent because the student knows the language	Ayşe, Nazan	2
I am competent because I love children and my profession	Mehmet, Dilek	2
I was not at the beginning, but now I am competent enough as I have improved myself over time	Hülya	1

Do you find yourself competent?	Teacher	f
I am incompetent for reasons arising from the physical environment	Veli	1
I am incompetent because of introverted students	Ahmet.	1
I am competent as I am trained on how to approach refugee students	Zeki	1
I am competent because I have good communication with her/his family.	Mutlu	1

According to Table 10, most of the participants stated that they did not find themselves competent at increasing the social skills of refugee students. It was put forth that the reasons for this situation are the language problem, the lack of time, and the lack of necessary information and education about refugee students. Teachers stated that they could not communicate with these students and that they did not have enough information about how to teach or help refugee students. Some teachers indicated that in order to teach refugee students, it is necessary to specialize in this field by going through some training. There are also opinions indicating that it is necessary to know the living conditions of refugee students and to get to know their cultures closely. Additionally, it was explained that distance education was provided due to the pandemic and that this education process prevented social skills studies. Some participants stated that if refugee students did not have language problems, they would be competent; some of them stated that they communicated well with them; and some others stated that they were educated about refugee students. Some opinions on the subject are as follows:

Hakan: *"We are not competent enough at school. The teacher needs to communicate first. If we know the other party's language, we can improve their social skills. Either they will learn our language or we will learn their language. I do not think teachers are successful in general."*
Musa: *"I do not find myself competent because I do not know about their culture and living conditions. I cannot understand many things because they cannot express themselves well. I think this requires an area of expertise. I think the socialization process should be experienced in the presence of a psychologist and a counselor."*
Yeliz: *"I think I am competent because I get on well with students."*

Conclusion and Discussion

Education plays an important role in the progress and development of a society. The target audience of education differs in the process of gaining desired behaviors. One of these differences is that refugee students have a place in the education system. Within the scope of this research, the opinions of teachers about the social skills of refugee students can shed light on the problems experienced.

When the teachers evaluated refugee students in general, they drew attention to the language problem. The fact that these students do not speak Turkish prevents them from understanding what is explained in the classes and being able to express themselves. There are various studies confirming that refugee children have language problems during the adaptation process to school (Alkalay et al., 2021; Almadani, 2018; Biçer & Özaltun, 2020; Bunar, 2019; Erdem, 2017; Graham et al., 2016; Kardeş & Akman, 2018; Sağlam & Kanbur, 2017; Sarıahmetoğlu & Kamer, 2021; Yurdakul & Tok, 2018). There are findings in the literature indicating that refugee students living in different countries also experience similar problems (Graham et al., 2016; Bajaj & Bartlett, 2017; Almadani, 2018; Koehler & Schneider, 2019). In the study of Erçakır-Kozan (2019), it was found that refugee students have difficulty understanding what is going on during class hours due to their low language proficiency. According to Dryden-Peterson (2015), language proficiency of refugee students often falls behind age-appropriate academic content. For this reason, it is clear that refugee students should be placed in classes with younger children. In the study conducted by Başar et al. (2018), it was concluded that the fact that refugee students do not know the language of the country they live in prevents them from understanding the teacher and causes them to isolate themselves from the classroom environment. In addition, it was explained in the study conducted by Agcadağ Çelik (2019) that the reason why Syrian refugee students cannot integrate with the education system is the language problem. Another point that teachers expressed when evaluating students is that refugee students are shy and introverted. They stated that they had not even heard the voices of some students for months. Indeed, these students' feelings of alienation, the traumas they have experienced, and the living conditions they are in can be considered the reasons for this situation. In addition to this, in the study carried out by Sakız (2016), it was indicated that teachers recommend that refugee students be taught Turkish. Teachers stated that refugee students do not generally talk much; they only answer when they are asked a question. This can be attributed to their lack of proficiency in Turkish and being shy. Besides, there are opinions indicating that refugee students have limited relationships with their friends and teachers. However, it was stated

that they establish relationships with students who are refugees like themselves. According to Çopur (2019), there is a significant difference in the social environment of refugee students before and after language acquisition because students, who had relations only with their friends who spoke in their native language before learning the language, were involved in different social environments when they learned the language, and hence, their adaptation process to the country increased. Similarly, in the research conducted by İzol (2019), it was concluded that refugee students can easily build up friendships with students from their own culture. At this point, the cultural structure and similar living conditions students have might be effective in increasing their closeness to each other.

Most of the teachers stated that the communication skills of refugee students are weak (Kaya & Ok, 2021). It can be stated that the main reason for this situation is that they do not speak the language. However, there are also teachers who stated that the communication skills of refugee students have improved over time because these students started learning the language over time and started having dialogues with their teachers and friends. In the study of Çopur (2019), it was emphasized that refugee students were accepted more by their other friends as they overcame the language barrier. Similarly, in the study conducted by Aykut (2019), the fact that refugee students do not speak the language is considered the biggest obstacle to communication. Sever (2020) also stated that although refugee students initially had problems with their classmates, they communicated with their friends as time passed.

The number of teachers who stated that refugee students' ability to solve the problems they face is sufficient and the number of teachers who stated that refugee students' ability to solve the problems they face is not sufficient are very close to each other. Teachers stated that students who can solve their problems are self-confident and have high communication skills. According to the study conducted by Serim (2019), refugee students are very enthusiastic about learning and are dedicated to being successful. Additionally, the teachers pointed out that students produce solutions by getting help from someone else. Findings from the research revealed that students who cannot solve their problems are prone to violence. These students may lead to the emergence of peer bullying in the classroom environment. In the study of Jusufbašić (2019), it was revealed that refugee students display aggressive behaviors in their communication with other students and teachers and also a tendency to violence (Nar, 2008; Sarıtaş et al., 2016). In contrast with this, in their studies, Rossi (2008) and Agcadağ Çelik (2019) drew attention to peer bullying against refugee students.

Most of the teachers stated that refugee students obey the school and classroom rules. However, according to the observation data, it is clear that the majority of refugee students come to school late in the morning at every stage of the academic year. Some teachers described refugee students as quiet students who do what the teacher says. The fact that refugee students do not speak the language, that they consider themselves foreigners, and that they are not able to express themselves may cause them to isolate themselves from their environment (Başar et al., 2018). The fact that these students fall into a passive position and do not stand out enough may cause them to seem like they are following the rules. According to the research of Karaağaç (2018), teachers generally stated that refugee students exhibit positive behaviors in obeying the classroom and school rules; yet, some teachers stated that these students come to school late and do not obey the classroom rules. There are also studies discussing refugee students who do not attend school (Hing et al., 2014) and refugee students who are forced to work at an early age (Baş et al., 2017).

Most of the teachers stated that refugee students are weak in terms of social skills. It was stated by the teachers that these students are included in the games and activities only when they are invited by other classmates or guided by the teacher. The study of Aykut (2019) also shows similarities with this finding. Based on this finding, it can be stated that other students and teachers have an important role in the development of social skills in refugee students. There are some opinions supporting the idea that the social skills of Afghan students are better than those of Syrian students. The fact that these students are from different cultures might be the reason for this situation. However, according to the research carried out by Gülcegül (2020), the problems experienced by refugee students do not differ by their nationality.

Teachers generally stated that they do not carry out any different activities to increase the social skills of refugee students. There are opinions defending the idea that it is more appropriate for refugee students to take part in the activities done for the whole class rather than treating them as different students. In the interviews she had with teachers, Karaağaç (2018) also concluded that it is right for refugee students to be in the same class with Turkish children and that this situation will strengthen their sense of belonging and contribute to their social cohesion. Some teachers stated that they do not know what to do because either there is not enough time, or they do not have enough information about these students. Similarly, in the study conducted by Er and Bayındır (2015), it was found out that the teachers did not receive any training for the education of refugee students, therefore they

had problems in the education of these students. Undoubtedly, teachers have the most important task of increasing the social skills of refugee students. For this reason, all teachers teaching refugee students should be provided with training, and they should not be given the feeling that they are on their own in the education of these students. In their study, Gürel and Büyükşahin (2020) revealed that none of the teachers received undergraduate training on the education of refugee students. For this reason, according to the research of Mogli et al. (2020), the inability of teachers to provide psychological support to refugee students and communication difficulties experienced due to language problems cause many problems that hinder the education process.

Teachers made various suggestions in order to increase the social skills of refugee students. The most expressed among these suggestions is to ensure that refugee students learn Turkish before they attend school. There are opinions defending the idea that refugee students should be included in the education system with a certain level of adaptation to society, which can be ensured by providing adequate education beforehand. In the study carried out by Yılmaz (2020), it was argued that since it is easier for pre-school children to learn a language, if refugee students start learning Turkish in preschool, it will contribute both to their cultural and academic adaptation. Similarly, et al. (2018) suggested in their study that refugee students should be provided with an education before school. In addition to this, according to the research conducted by Şeker (2020), it was concluded that expert psychologists should provide psychological support to refugee students. In some studies (Alkalay et al., 2021; Lawrence et al., 2019; Tümtaş & Ergun, 2016; Vanore, 2015) in the literature, it was observed that refugee students have difficulty adapting because they experience post-migration trauma and have psycho-social problems.

Research findings reveal that most teachers do not find themselves competent to increase the social skills of refugee students. Er and Bayındır (2015) stated that some teachers cannot get along with refugee students because these students have language problems. They also pointed out that teaching refugee students requires separate expertise and that it is difficult to contribute to this process only with expertise in primary school teaching. Supporting this finding, Gichiru (2014), Bacakova (2012), and Kanbur (2017) found out in their studies that teachers in general lack knowledge and skills in the education of refugee children. Contrary to this argument, there are also teachers who consider themselves competent to increase the social skills of refugee students. These teachers stated that they can contribute adequately because they teach students who can speak Turkish and have no communication problems.

Recommendations

In accordance with the results of the research, the following recommendations can be made:
-It can be suggested that teachers be provided with in-service training on improving the social skills of refugee students;
-that teachers should be supported by various institutions, organizations, and individuals;
-and that refugee students should be taught Turkish in order to improve their social skills.

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References

Agcadağ Çelik, İ. (2019). Sınıf öğretmenleri gözünden Suriyeli mülteci çocuklar. *The Journal of International Social Research, 12*(66), 662-680. http://dx.doi.org/10.17719/jisr.2019.3615

Aktın, K. (2018). Sığınmacı çocukların mutluluk temalı resimlerinden yansımalar. *Elementary Education Online, 17*(3), 1524-1547. https://doi.org/10.17051/ilkonline.2018.466381

Alkalay. G., Kıral, B., & Erdem, A. R. (2021). İlkokul yönetici ve sınıf öğretmenlerine göre Suriyeli sığınmacı öğrencilerin yaşadıkları sorunlar ve çözüm önerileri. *Muğla Sıtkı Koçman Üniversitesi Eğitim Fakültesi [MSKU Journal of Education], 8*(1), 231-249. http://dx.doi.org/10.21666/muefd.809182

Almadani, D. S. (2018). *Syrian refugee students academic and social experinces in American public schools,* [Doctoral Dissertation]. DePaul University. https://via.library.depaul.edu

Ataseven, H. (2019). *Dil gelişimini destekleyici oyun etkinlikleri programının 5-6 yaş grubu mülteci çocukların dil gelişimlerine ve günlük yaşam becerilerine etkisinin incelenmesi,* [Master's Thesis]. Selçuk University.

Aykut, S. (2019). *Türkiye'deki Suriyeli çocukların eğitim sorunları: farklılıklara saygı eğitimi odağında okul sosyal hizmeti önerisi,* [Doctoral Dissertation]. Hacettepe University.

Baak, M. (2019). Racism and othering for South Sudanese heritage students in Australian schools: Is inclusion possible?. *International Journal of Inclusive Education*, *23*(2), 125-141. https://doi.org/10.1080/13603116.2018.1426052

Bačáková, M. (2012). Vzdělávání dětí-uprchlíků: podpora nabízená základními školami v Norsku a ČR. *Orbis Scholae, 6*(1), 81–93.

Bajaj, M., & Bartlett, L. (2017). Critical transnational curriculum for immigrant and refugee students. *Curriculum Inquiry Journal, 47*(1), 25-35. http://dx.doi.org/10.1080/03626784.2016.1254499

Barrett, N. & Berger, E. (2021). Teachers' experiences and recommendations to support refugee students exposed to trauma. *Social Psychology of Education*, 1-22. https://doi.org/10.1007/s11218-021-09657-4

Baş, M., Molu, B., Tuna, H., & Baş, G. (2017). Göç eden ailelerin sosyo-kültürel ve ekonomik değişiminin kadın ve çocuk yaşamına etkisi. *Itobiad: Journal of The Human Social Science Researches, 6*(3), 1680-1693.

Başar, M., Akan, D., & Çiftçi, M. (2018). Mülteci öğrencilerin bulunduğu sınıflarda öğrenme sürecinde karşılaşılan sorunlar. *Kastamonu Education Journal, 26*(5), 1571-1578. http://dx.doi.org/10.24106/kefdergi.427432

Bešić, E., Gasteiger-Klicpera, B., Buchart, C., Hafner, J., & Stefitz, E. (2020). Refugee students' perspectives on inclusive and exclusive school experiences in Austria. *International journal of psychology*, *55*(5). 723-731. https://doi.org/10.1002/ijop.12662

Biasutti, M., Concina, E., & Frate, S. (2020). Working in the classroom with migrant and refugee students: The practices and needs of Italian primary and middle school teachers. *Pedagogy, Culture & Society*, *28*(1), 113-129. https://doi.org/10.1080/14681366.2019.1611626

Biçer, N., & Özaltun, H. (2020). Mülteci ortaokul öğrencilerinin Türkçe dil becerilerine ve okula uyum süreçlerine ilişkin Suriyeli ve Türk öğrencilerin görüşleri. *International Journal of Eurasian Research, 8*(23), 348 – 364.

Bunar, N. (2019). Education of refugee and asylum-seekin children. *Oxford Research Encyclopedias, 10*, 1-10. https://doi.org/10.1093/acrefore/9780190264093.013.118

Creswell, J. W. (2021). *Nitel araştırma yöntemleri, beş yaklaşıma göre nitel araştırma ve nitel araştırma deseni* (Çev. Ed: S. B. Demir & M. Bütün). Siyasal Kitabevi.

Çopur, D. A. (2019). *Mülteci öğrencilerin uyum sürecinde karşılaştıkları sorunlar ve çözüm önerileri,* [Master's Thesis]. Düzce University.

Çubukçu, Z., & Gültekin, M. (2006). İlköğretimde öğrencilere kazandırılması gereken sosyal beceriler. *Bilig, 37*, 155-174.

Denham A., Hatfield S., Smethurst N., Tan E., & Tribe C. (2006). The effect of social skills ınterventions in the primary school. *Educational Psychology in Practice, 22*(1), 33-51.

Dryden-Peterson, S. (2015). Refugee education in countries of first asylum: Breaking open the black box of pre-resettlement experiences. *Theory and research in education, 14*(2), 131-148. https://doi.org/10.1177/1477878515622703

Emin, M. N. (2019). *Türkiye'deki Suriyeli çocukların eğitimi* (1th Edition). SETA Foundation for Political, Economic and Social Research.

Er, A. R., & Bayındır, N. (2015). İlkokula giden mülteci çocuklara yönelik sınıf öğretmenlerinin pedagojik yaklaşımları. *International Journal of Social and Educational Sciences, 2*(4), 175-185.

Erçakır-Kozan, B. (2019). *A case study: Exploring the experiences of educational stakeholders in relation to refugee education at a public school in Mamak,* [Master's Thesis]. Middle East Technical University.

Erdem, C. (2017). Sınıfında mülteci öğrenci bulunan sınıf öğretmenlerinin yaşadıkları öğretimsel sorunlar ve çözüme dair önerileri. *Journal of Civilization Studies, 1*(1), 26-42.

Ergin, D., & Dişci, S. (2018, Mart, 24-25). Okul öncesi dönemde sevgi-saygı değerleri kazanımı gözlem formunun geliştirilmesi. VII. IBANESS Congress Series, Tekirdağ, Türkiye.

Fazel, M. and Stein, A. (2002). The mental health of refugee children. *Archives of Disease in Childhood, 87*(5), 366-370. http://dx.doi.org/10.1136/adc.87.5.366

Field, J. (2003). Social capital. London: Routledge.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to desIgn and evaluate research in education*. Mc Graw HIll.

Gay, L. R., Mills, G. E., & Airasian, P.W. (2012) *Educational research: Competencies for analysis and application*. 10th Edition, Pearson.

Gichiru, W. (2014). Struggles of finding culturally relevant literacy practices for Somali students: Teachers' perspectives. *New England Reading Association Journal, 49*(2), 67-74.

Graham, H. R., Minhas, R. S., & Paxton, G. (2016). Learning problems in children of refugee background: A systematic review. *American Academy of Pediatrics, 137*(6), 1-15.

Gresham, F.M. (1985). Utility of cognitive-behavioral procedures for social skills training with children: A critical review. *Journal o f Abnormal Child Psychology, 13*(3), 411-423.

Gresham, F. M. (2016). Social skills assessment and intervention for children and youth. *Cambridge Journal of Education, 46*(3), 319-332. http://dx.doi.org/10.1080/0305764X.2016.1195788

Gülcegül, S. (2020). *Sınıfında mülteci öğrenci olan sınıf öğretmenlerinin yaşadığı problemlerin incelenmesi*, [Master's Thesis]. Kırıkkale University.

Gürel, D., & Büyükşahin, Y. (2020). Education of Syrian refugee children in Turkey: Reflections from the application. *International Journal of Progressive Education, 16*(5), 426-442. http://dx.doi.org/10.29329/ijpe.2020.277.26

Hing, V., Lun, P., & Phann, D. (2014). *The impacts of adult migration on children"s wellbeing. The Case of Cambodia.* Cambodia Development Resource Institute, Final Report, 1-36.

İzol, N. (2019). *Suriyeli mülteci çocukların eğitim hayatına uyum sürecinin değerlendirilmesi,* [Master's Thesis]. Üsküdar University.

Jusufbašıć, S. (2019). *Examınıng the role of educatıon ın the socıal Inclusıon of syrıan refugees ın turkısh mıddle Schools,* [Master's Thesis]. Marmara University.

Kanbur, N. İ. (2017). *İlkokulda görev yapan öğretmenlerin mülteci öğrencilere yönelik tutumlarının incelenmesi*, [Master's Thesis]. Sakarya University.

Karaağaç, F. C. (2018). *Educatıonal problems of syrıan refugee students ın elementary schools,* [Master's Thesis]. Yeditepe University.

Kardeş, S., & Akman, B. (2018). Suriyeli sığınmacıların eğitimine yönelik öğretmen görüşleri. *Elementary Education Online, 17*(3), 1224-1237. https://doi.org/10.17051/ilkonline.2018.466333

Karkouti, I. M., Wolsey, T. D., Bekele, T. A., & Toprak, M. (2021). Empowering teachers during refugee crises: Social support they need to thrive. *Teaching and Teacher Education, 107*, 103471. https://doi.org/10.1016/j.tate.2021.103471

Kaya, D., & Ok, G. (2021). Problems encountered by mathematics and science teachers in classrooms where Syrian students under temporary protection status are educated and suggestions for solution. *International Journal of Contemporary Educational Research, 8*(1), 111-127. https://doi.org/10.33200/ijcer.774094

Koehler, C., & Schneider, J. (2019). Young refugees in education: the particular challenges of school systems in Europe. *Comparative Migration Studies, 7*(28), 1-20. https://doi.org/10.1186/s40878-019-0129-3

Kranrattanasuit, N. (2020). Emergency, exclusion, and inequity in education of refugee and asylum seeker children in Indonesia, *The Social Science Journal,* 1-16. https://doi.org/10.1080/03623319.2020.1728504

Kultaş, E. (2017). *Türkiye'de bulunan eğitim çağındaki Suriyeli mültecilerin eğitimi sorunu (Van İli örneği),* [Master's Thesis]. Yüzüncü Yıl University.

Lawrence, J. A., Dodds, A. E., Kaplan, I., & Tucci, M. M. (2019). The Rights of Refugee Children and The un Convention on The Rights of The Child. *Laws, 8*(20), 20, 1-22. https://doi.org/10.3390/laws8030020

Levent, F., & Çayak, S. (2017). Türkiye'deki Suriyeli öğrencilerin eğitimine yönelik okul yöneticilerinin görüşleri. *HAYEF: Journal of Education, 14*(27), 21-46.

Little, S. G., Swangler, J., & Akin-Little, A. (2017). *Defining social skills. In Handbook of social behavior and skills in children* (pp. 9-17). Springer, Cham.

McDaniel, S. C., Bruhn, A. L., & Troughton, L. (2017). A brief social skills intervention to reduce challenging classroom behavior. *Journal of Behavioral Education, 26*(1), 53-74. https://doi.org/10.1007/s10864-016-9259-y

McIntyre, J., & Hall, C. (2020). Barriers to the inclusion of refugee and asylum-seeking children in schools in England. *Educational Review, 72*(5), 583-600. https://doi.org/10.1080/00131911.2018.1544115

Meda, L., Sookrajh, R., & Maharaj, R.B. (2012). Refugee children in South Africa: Access and challenges to achieving universal primary education. *Africa Education Review, 9*(1), 152–168. https://doi.org/10.1080/18146627.2012.755287

Miles, M. B., & Huberman, A. M. (1994). Qualitative data analysis. Thousand Oaks, CA: Sage Publications.

Mogli, M., Kalbeni, S., & Stergiou, L. (2020). "The teacher is not a magician": teacher training in greek reception facilities for refugee education. *International e-Journal of Educational Studies (IEJES), 4*(7), 42-55. https://doi.org/10.31458/iejes.605255

Mwangi, L. (2014). *School factors influencing refugee children access to primary education in Kasarani District Nairobi, Kenya.* A Research Project Submitted in Partial Fulfillment of the Requirements for the Degree of Masters in Education Education in Emergencies: University of Nairobi.

Nar, B. (2008). *Göçün eğitime ve eğitim yönetimine etkileri,* [Master's Thesis]. Sakarya University.

Ndijuye, L. G., & Rao, N. (2018). Pre-primary education policy in Tanzania: Does it meet the educational needs of newly naturalized refugee children?. *Global Education Review, 5*(4), 36-54.

Patton, M. Q. (1987). *How the use qualitative methods in evaluation*. Newbury Park: SAGE.

Patton, M. Q. (2018). *Nitel araştırma ve değerlendirme yöntemleri* (Çev. Ed: M. Bütün & S. B. Demir). Pegem Akademi.

Rossi, A. (2008). The impact of migration on children in developing countries. Paper presented at the Youth Migration Conference, 24-26 April, Bellagio, Italy.

Sağlam, H. İ., & Kanbur, N. İ. (2017). Sınıf öğretmenlerinin mülteci öğrencilere yönelik tutumlarının çeşitli değişkenler açısından incelenmesi. *Sakarya University Journal of Education, 7*(2), 310-323. https://doi.org/10.19126/suje.335877

Sakız, H. (2016). Göçmen çocuklar ve okul kültürleri: Bir bütünleştirme önerisi. Migration Journal, 3(1), 65-81.

Samancı, O., & Uçan, Z. (2017). Çocuklarda sosyal beceri eğitimi. *Journal of Graduate School of Social Sciences, 21*(1), 281-288.

Sarıahmetoğlu, H., & Kamer, S.T. (2021). Yabancı uyruklu öğrencilerin eğitimi ve uyumu: Sorunlar ve çözüm önerileri. *MSKU Journal of Education, 8*(1), 612-634. https://doi.org/10.21666/muefd.852569

Sarıtaş, E., Şahin, Ü., & Çatalbaş, G. (2016). İlkokullarda yabancı uyruklu öğrencilerle karşılaşılan sorunlar. *Pamukkale University Journal of Social Sciences Institute, 25*(1), 208-229.

Serim, S. (2019). *The educatıonal well-beıng of syrıan refugee chıldren ın publıc schools: A qualıtatıve study ın ıstanbul,* [Master's Thesis]. Boğaziçi University.

Sever, M. B. (2020). Suriyeli mülteci çocukların eğitim durumu ve sosyal uyum örneklemi. *Journal of European Education, 10*(1-2), 1-16.

Şeker, B. D., & Aslan, Z. (2015). Refugee children in the educational process: An social psychological assessment. *Journal of Theoretical Educational Science, 8*(1), 86-105. http://dx.doi.org/10.5578/keg.8234

Şeker, S. (2020). *Mülteci öğrencilerin karşılaştığı eğitim sorunları: Yozgat ili örneği,* [Master's Thesis]. Yozgat Bozok University.

Turner, D. T., McGlanaghy, E., Cuijpers, P., Van Der Gaag, M., Karyotaki, E., & MacBeth, A. (2018). A meta-analysis of social skills training and related interventions for psychosis. *Schizophrenia bulletin, 44*(3), 475-491. https://doi.org/10.1093/schbul/sbx146

Tümtaş, M. S., & Ergun, C. (2016). Göçün toplumsal ve mekansal yapı üzerindeki etkileri. *The Journal of Faculty of Economics Administrative Sciences, 21*(4), 1347-1359.

UNHCR (2020). UNHCR Turkish Statistics. https://www.unhcr.org/tr/unhcr

Vanore, M. (2015). *Family-member migration and the psychosocial health outcomes of children in Moldova and Georgia*, (PhD degree). Maastricht University.

Yavuz, Ö., & Mızrak, S. (2016). Acil durumlarda okul çağındaki çocukların eğitimi: Türkiye'deki Suriyeli mülteciler örneği. *Migration Journal, 3*(2), 175-199. https://doi.org/10.33182/gd.v3i2.578

Yıldırım, A., & Şimşek, H. (2018). *Sosyal bilimlerde nitel araştırma yöntemleri* (11th Edition). Seçkin Publications.

Yılmaz, M. (2020). *Suriyeli mülteci öğrencilerin okul ortamına uyumu,* [Master's Thesis]. İstanbul Medeniyet University.

Yurdakul, A., & Tok, T. N, (2018). Öğretmen Gözüyle Mülteci/Göçmen Öğrenci. *Adnan Menderes University Faculty of Education Journal of Education Sciences, 9*(2), 46-58.

Development of a Jealousy Scale in Romantic Relationship: A Validity and Reliability Scale

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Abstract

The aim of this study is to present the validity and reliability analyzes of the Romantic Jealousy in Relationships Scale (JRRS), which was developed to assess romantic jealousy in individuals aged 18 and over. The scale was developed through a literature review and tailored to the Turkish culture. The exploratory factor analysis revealed a three-dimensional structure, with the first dimension explaining 32.94% of the total variance, the second dimension explaining 11.34%, and the third dimension explaining 9.21%. The total variance explained by all three dimensions was 53.50%. The moderate correlation between the Anxious Attachment subdimension of the Experiences in Close Relationships Scale-Short Form (ECRS-SF) and the JRRS provided evidence of criterion-related validity, consistent with previous findings in the literature. As a result of the reliability analysis, the reliability value of the measurement tool was found to be .85 according to the Cronbach alpha. According to the sub-dimensions, reliability results were obtained as .83 for the social environment and past relationships factor, .83 for the jealousy perception factor and .71 for the perception of the self-perception factor. The JRRS was compared to other established scales measuring jealousy in romantic relationships, and the results further supported its reliability and validity. Overall, the study showed that the JRRS is a valid and reliable tool for assessing romantic jealousy in individuals.

Keywords: Romantic relationship, Jealousy in romantic relationship scale, Jealousy, Romantic jealousy, Scale development

Introduction

Adulthood is a life transition which includes great changes or adaptations in almost every part of life. Schulenberg, Bryant, and O'Malley (2004), who call adulthood a hold on life, defines romantic success as being able to maintain(maintaining) a romantic relationship without any no separation history from 18 to 26 years old while Arnett (2003) states that following social rules and roles and committing oneself to marriage or a romantic relationship are some of the common traits of adults. Therefore, we might assume that an individual, after completing his educational studies and gaining financial independence, will seek to find his soulmate and a romantic relationship to be happy.

Love and passion underlie romantic relationships. Love, which has existed throughout history, is one of the feelings that anyone has wished to experience in his life (Atak & Taştan, 2012). Although the aim of romantic relationships is to experience such good feelings, it is not surprising to come into conflicts and have problems with one's partner, some of which are caused by romantic jealousy.

Jealousy is a feeling experienced when someone has lost or is about to lose his or her romantic relationships because his or her partner has started a romantic affair with somebody else (Parrott, 1991). Jealousy might exist in friendships, work, academic, and family relationships as well. The understanding of romantic jealousy in romantic relationships might differ greatly from person to person and from culture to culture. White (1981) defined romantic jealousy as the body of feelings, thoughts and behaviors threatening the future and quality of the relationship. The threat is thinking that there is a rival (real or imagined) who can be the cause of losing the partner. Similarly, Pines (1998) interprets romantic jealousy as the whole of one's reactions given to the circumstances that might result in ending the relationship that is valued by that person.

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Ellis and Weinstein (1986) identify three foundations of romantic jealousy, which are (1) an attachment between two persons, (2) the valuable resources emerged around the commitment, and (3) being the receiver of these resources or the deconstruction of the commitment to rebuild the resources by a third party. Problems in any of these foundations may produce different reactions. In other words, someone might try to damage a couple's relationship; however, the couple might not feel jealous as long as they do not perceive it as a threat. Therefore, jealousy completely depends on an individual's perception of the situation.

Mattingly, Whitson, and Mattingly (2012) express that jealousy is an emotional experience that can strain and stress the relationship out. Jealous behavior is usually demonstrated when a person is afraid to lose his/her partner or when s/he thinks s/he will lose the relationship because of another person (Sardelić & Perak, 2021).

Önder (2019) claims that jealous behavior is observed when a person feels bad and is unable to settle the matter with the relationship whereas Tortamış (2014) points out that romantic jealousy is any response given to the possible threats that can harm the structure of the relationship.

The nature of the romantic jealousy seems to evolve in accordance with the social changes throughout the history. Until the 1960s, jealousy was often taken naturally within some limits and considered as a sign of being valued. With the emphasis put on personal space and freedom during the sexual revolution of the 1960s, jealousy began to be considered as a learned feeling and a manifestation of negative personality traits such as low self-esteem. In the early 1970s, some women's magazines called jealousy as a useless feeling that has no place in romantic relations (Clanton, 1996).

The definitions above seem to converge on certain aspects of jealousy. The main drive of jealousy might be the fear of abandonment, being degraded, competing with a rival, or being deceived depending on the person (Pines, 1998). Regardless of the underlying reason, all those definitions include a partner who is feared to be lost and a romantic relationship that is on edge. It should also be noted that jealousy is a combination of feelings and reactions rather than being a single concept (Demirtaş, 2004). In addition, jealousy is present only when the relationship is ended due to the problems arising from a third party. Thinking that the compassion and love that one has will be lost to someone else might be one of the reasons of the complicated reactions (Wreen, 1989).

Although jealousy is associated with negative feelings such as anxiety, anger, and fear, most people tend to feel jealous from time to time and may wish their partners to be jealous to some extent because jealousy might be perceived as an indicator of a partner's intention to carry on the relationship (Nazlı & Karaman, 2021). The criterion here is the dose of romantic jealousy. Clinically, there are two forms of jealousy, which are normal and abnormal jealousy. The normal level of jealousy, which is not found odd, is related to a real threat to the relationship whereas pathological, or abnormal, jealousy exists even though there are no such real threats (Al-Dehaiman, 2021). Normal jealousy is present as long as faith and loyalty continue and it is a reaction to a threat to the relationship. Abnormal jealousy, on the other hand, has no defined limits. One of the reasons is culture and society because the things approved or not approved by the society differs from culture to culture. As mentioned above, the highlights in history and the changes in mindsets have a determining effect on the interpretation of jealousy as normal or abnormal (Costa, Sophia, Sanches, Tavares, & Zilberman, 2015). Abnormal jealousy, which has been used interchangeably with fancied, pathological, or morbid jealousy, differs from normal jealousy in that abnormal jealousy is associated with intense emotional reactions lacking objectivity and normality. Pathological jealousy involves behaviors and opinions about the partner's unfaithfulness that do not have a realistic basis and that cannot be proved to be true. These kind of unsupportable ideas and behaviors not only might have detrimental effects at the individual level but also can do physical and psychological harm to the partner. In a study where individuals with normal and pathological jealousy were compared for their jealousy concerns, the researchers found that participants with normal jealousy were reported to think about the probability of ending the relationship evaluating and restricting their partner's behavior for 1-4 hours a day whereas the participants with pathological jealousy did the same for 4-8 hours a day, which makes up one third of a day (Costa et al., 2015; Marazziti et al., 2003).

Romantic jealousy is often the result of the interaction between a triggering event and the person's predisposition towards jealousy. There are various factors triggering jealousy. Pines and Aronson (1983) found that people tend to be more jealous when the third person is someone they know well and that they are less jealous when it is someone they do not know. They also reported that people with psychological and physical conditions are more likely to be jealous of their partners.

Kaplan and Tasa (2022) worked with college students and concluded that people with a more traditional understanding of social gender roles are often more jealous of their partners in their romantic relationship.

Sheets, Fredendall and Claypool (1997) identified 4 jealousy-evoking situations which are (1) partner showing interest in another (e.g., "Your partner says that someone else is attractive and good-looking" or "your partner is dancing with another person in a party"); (2) another person showing interest in your partner (e.g., "your partner tells you that another is interested in your partner", "your partner's friend says that another is interested in your partner" or "Your partner shows you a letter from a secret admirer; (3) prior relationships (e.g., "Your partner mentions past relationships", "Your partner talks to his/her ex-boyfriend/girlfriend's mother"); (4) ambiguous scenes (e.g., "Your partner gets very dressed up and goes out with friends, leaving you behind", "Your partner

goes to another (guy's/girl's) house and calls you from there"). The results of the study also showed that when people feel jealous, they tend to fight with their partners rather than breaking up with them. Jealousy experiences may also differ by attachment style. Sharpsteen and Kirkpatrick (1997) reported that participants with a secure attachment style were more likely to express their anger when they felt jealous while participants with anxious attachment said even though they felt furious they avoided confronting their partners and expressing their feelings. Although the participants with avoidant attachment felt angrier compared to the participants with secure attachment, they stated that they had a more intense feeling of sadness and that they grew/would grow away from their partners in order not to tarnish their self-respect.

The intimacy and positive experiences that individuals have in their romantic relationships play an important role in their social development, adaptive skills and psychological well-being. These experiences have positive effects on individual as well as the relationship itself. Some behaviors, like jealousy, that might be perceived as a sign of love may do real harm to relationships. Whether it is perceived or imagined, romantic jealousy might have a substantial and destructive effect on a relationship. An individual may resort to violence and restricting behaviors or even more devastating acts. Statistics show that 5 in every 50 women who were in news stories in 2013 were reported to be killed by an ex-husband or boyfriend because of jealousy (Atakay, 2014).

When the literature is examined, it is seen that there are measurement tools related to romantic jealousy. When the measurement tools developed to measure the jealousy tendencies of individuals in romantic relationships are examined, it is seen that the first scale is the "Self-Reported Jealousy Scale" revised by Bringle, Roach, Andler, and Evenbeck (1979). The scale developed for adult individuals consists of three sub-dimensions: minor romantic, non-romantic, and major romantic jealousy. The Chronic Jealousy Scale, which was developed by White (1981), measures a person's tendency to be chronically jealous. It consists of 6 items and one dimension. The Relationship Jealousy Scale, which was also developed by White (1981), consists of 6 items and 32, and evaluates whether the person sees himself or herself as jealous in his romantic relationship. In the jealousy scale developed by Mather and Severa (1981), it was aimed to test various beliefs about jealousy. Individuals with a dating relationship or married university students participated in the study. The first dimension of the measurement tool, which consists of 6 factors, is related to the partner's flirting behaviors with others, the second dimension is related to threats arising from the popularity of the partner, the third dimension is the threatening behaviors of the insecure partner, the fourth dimension is about the partner's past relationships, and the fifth dimension is the indifferent attitudes of the partner. The last dimension includes the gender differences related to jealousy. When the measurement tools used to evaluate romantic jealousy in Turkey were evaluated, it was revealed that almost all of them were adaptations of tools developed in other countries and cultures. For example, the Romantic Jealousy Scale developed by Pines and Aronson (1983) was adapted into Turkish by Demirtaş (2004). However, there are problems in adapting the scale to Turkish culture (Demir, 2019). There is a tool developed by Turkish researchers; but it only measures emotional jealousy, which is one of the components of romantic jealousy. Since jealousy in romantic relationships is a multidimensional concept on which most researchers agree, there is a need for an established and comprehensive tool (Elphinston, Feeney, & Noller, 2011). Therefore, the development of a scale to measure jealousy in romantic relationships can help individuals gain insight into themselves in order to secure new relationships or relationships they already have.

Method

For this purpose, primarily a literature review on romantic jealousy was conducted. An item pool was created through the information obtained after the literature review. It is a 5-point Likert-type scale, which consist of 16 items. The results of the validity and reliability analysis of the measurement tool are presented in the findings section.

Study Group

A study group of 400 people was formed for the study. Validity and reliability analyzes were carried out using a 400-person data set.

Table 1. Demographic characteristics of the participants

Variables	n	%
Age		
18-23	167	41,8
24-29	140	35,0
30 or older	93	23,3
Romantic Relationship Status		
No Relationship	146	36,5
Date/Boyfriend/Girlfriend	67	16,8
Engaged	82	20,5
Married	105	26,3

Demograhic characteristics of the participants are presented in Table 1. Most of the participants' age (N=167, %41,8) ranged between 18 and 23. 146 of the participants (%36,5) had no romantic relationship, 82 of the participants (%20,5) were engaged and 105 of the participants (%26,3) were married.

Data Collection Tools

Within the scope of the study, The Experiences In Close Relationships Scale Short Form was used to examine the validity of the Romantic Jealousy Scale. In addition, the participants were asked to answer demographic questions such as age, romantic relationship status through the Personal Information Form.

The Experiences in Close Relationships Scale- Short Form (ECRS-SF): ECRS-SF, which was developed by Wei et al. (2007), was adapted to Turkish by Savcı and Aysan (2016). The original version of the scale has 12 items rated on a 7-point Likert scale (1- strongly disagreee, 7- strongly agree) whereas the Turkish version with 12 items is rated on 5-point Likert scale (1- strongly disagreee, 7- strongly agree). The scale has two factors, which are Anxiety and Avoidance. Higher scores in each factor indicate higher levels of that factor. Items 1, 5, 8, and 9 are reverse-coded. The adaptation study of the scale were carried out with 773 college students. The Cronbach's alpha for Avoidance and Anxiety were .90. Exploratory and Confirmatory Factor Analyses were used for the construct validity. Kaiser-Meyer- Olkin (KMO= .90) and the Bartlett's Test of Sphericity ($\chi2$ = 2864.712) showed that the data was suitable for factor analysis. Two factors were extracted because there were two eigenvalues greater than 1. The EFA results showed that the two-factor scale explained %72.1 of the total variance. For this study, the cronbach alpha value of the ECRS-SF was found to be .70.

The Development of the Assessment Tool

First, an item pool was developed for the JRRS after reviewing the national and international studies in the literature. An initial pool of 50 items was formulated based on the opinions of Psychological Counselling and Guidance experts to support the content validity of the JRRS. Two field experts conducted research on romantic relationships, one field expert worked on measurement and evaluation, and two field experts conducted studies on relationships and adolescents. Experts rated the proposed items as Appropriate or Not Appropriate explaining their reasons as in the following example:

> *"..... I'm not sure this item will help to determine the level of jealousy. You may need to revise or reevaluate it."*
> *"...sometimes the accompanying emotion might not be just anger."*

A pilot study was carried out to test the reliability and validity of the preliminary form with 22 items. KMO (.87) and the Bartlett's Test of Sphericity [x^2 (153) =2530,113; .00 (p<.05)] values show that the correlations between the items were suitable for EFA. Principal component analysis was run to reveal the number of factors of the scale. The results showed a 4-factor model with eigenvalues greater than 1. The first, second, third and fouth factors explained %22,188, %14,102, %12,863, and %8,201 of the total variance of the scale,respectively. The four factors together explained %57,354 of the total scale variance. Items related to each other are gathered together through sub-dimensions. In other words, the items form the factors, and the factors combine to form the scale. Varimax rotation analysis was performed in order to explain which items the sub-dimensions consisted of. Varimax rotation was used to clarify the relationship between the factors and the items. , the items fell under 4 factors. In order to achieve scientific construct and content validity, subscales should include at least three items (Viswanathan, 2010). Accordingly, the four-factor model was not suitable and Item 10 was removed from the scale in order to reduce the number of the factors to three. It is recommended that the difference between the maximum value of an item in a factor and the second highest value of that item in another factor should be at least .10. If an item has more than one significant loading, it is called a cross-loading, which should be eliminated from the scale (Büyüköztürk, 2012). The results showed that Item 5 was a cross-loading and therefore, it was removed from the scale for further analysis. The factor structure of the 16-item scale was investigated.

Data Analysis and Interpretation

While developing the Jealousy in Romantic Relationship scale, exploratory factor analysis and criterion validity were used within the scope of validity analysis, Cronbach alpha and McDoanld Omega coefficient and test-retest result were used within the scope of reliability analysis. Pearson Correlation coefficient was evaluated in order to determine the relationships between the determined sub-dimensions. SPSS 25 and Jamovi 2.3 package program were used while performing these analyzes.

Findings

Exploratory Factor Analysis (EFA)

The EFA results showing the construct validity of the scale are presented below. 16 items were included in the factor analysis based on the results of the item-total and item-remainder analysis. KMO and Bartlett's Test of Spherecity values are shown in Table 2.

Table 2. Kaiser-Meyer-Olkin and Bartlett's Test of Spherecity Results for JRRS

Kaiser-Meyer-Olkin (KMO)		.884
Bartlett's Test of Sphericity	x^2	2423,143
	p	.00

EFA for the 16-item scale revealed that KMO (.884) and the Bartlett's (2423,143; p=.00) were significant. The item removal seemed to increase the correlations between the items on the scale. The factor structure of the 16-item scale was investigated and the results are presented in Table 3.

Table 3. Factor eigenvalues, variance and cumulative variance values for JRRS

Factor	Initial Eigenvalues			Sums of Squared Loadings After Rotation		
	Total	% Variance	Cumulative %	Total	% Variance	Cumulative %
1	5,271	32,943	32,943	3,912	24,449	24,449
2	1,815	11,346	44,289	2,532	15,823	40,272
3	1,474	9,215	53,504	2,117	13,232	53,504

The analysis revealed that the 16 items of the JRRS fell under 3 factors with eigenvalues greater than 1. The first, second, and third factor explained %32,943, %11,346 and %9,215 of the total variance of the scale, recpectively. The three factors together explained %53,504 of the total scale variance. Table 4 shows the factor loadings of the items. The fact that the measurement tool explains at least 50% of the total variance means that the scale has the ability to explain the target concept (Yaşlıoğlu, 2017).

Table 4. Factor loadings of the items

Item No	1st Factor Social Environment and Past Relationships	2nd Factor Jealousy Perception	3rd Factor Self- Perception
Item 1	.728		
Item 4	.707		
Item 8	.706		
Item 13	.682		
Item 2	.678		
Item 3	.640		
Item 7	.608		
Item 9	.505		
Item 11		.894	
Item 12		.868	
Item 14		.707	
Item 16			.704
Item 5			.562
Item 15			.560
Item 10			.637
Item 8			.603

The first factor included 8 items (1, 2, 3, 4 , 6, 7, 9, and 13) with factor loadings ranging from .555 to .728. The items in the first factor, which was called "the Social Environment and Past Relationships" were concerned with the jealousy evoking situations or behaviors related to partner's social environment and past relationships. The second factor included 3 items (11, 12, and 14) with factor loadings ranging from .707 to .894. The items in the second factor, the Jealousy Perception, were related to one's understanding of jealousy and its effects on a romantic relationship. The third factor included 5 items (5, 8, 10, 15, and 16) with factor loadings ranging from .652 to .771. As these items were about the effects of jealousy on the individual, it was named the "Self-Perception". After the factor analysis, Pearson Correlation analysis was run to investigate the correlations between the factors. The results are presented in Table 5.

Table 5. Pearson correlations between the factors

	1	2	3	4
1 JRRS Total	1	.892**	.647**	.753**
2 Social Environment and Past Relationships		1	.400**	.483**
3 Jealousy Perception			1	.317**
4 Self- Perception				1

Table 10 shows that all the factors were positively correlated with each other and the whole scale. The JRRS was positively and very strongly associated with the Social Environment and Past Relationships and the Self-Perception factors ($r=.892$, $p<.01$; $r=.753$, $p<.01$). Similarly, there was a moderate association between the JARSS and the Jealousy Perception ($r=.647$, $p<.01$). The correlation between the factors should not exceed .60 because a strong relationship between the factors means that the highly correlated factors are measuring the same constructs in a statistical sense (Şencan, 2005). The Social Environment and Past Relationship factor was positively and moderately related to the Self- Perception and the Jealousy Perception factors ($r=.400$, $p<.01$; $r=.483$, $p<.01$). Similarly, there was a positive and moderate association between the Self- Perception and the Jealousy Perception factors ($r=.317$, $p<.01$).

Criterion Related Validity

The Experiences in Close Relationships Scale-Short Form (ECRS-SF) was used for the criterion related validity. The results are presented in Table 6.

Table 6. JRRS and ECRS-SF correlations

Factors	JRRS Total Score
Avoidant Attachment	.002
Anxious Attachment	.400

As seen in Table 6, there is a positive and moderate relationship between the JRRS total scores and Anxious Attachment. Considering that people with anxious attachment style are very likely to worry about losing their partners, the correlation between jealousy in a relationship and anxious seems to be satisfying ($r=.400$). Therefore, we might conclude that the tool developed in the current study is good at assessing the target constructs.

Reliability Analysis Results

The means, standard deviations, Cronbach's alpha and McDonald Omega values for JRRS and its subdimensions are presented in Table 7.

Table 7. Internal consistency coefficients for JRRS and subdimensions

Items	$\bar{x}$	SD	α	ϖ
JRRS Total	55,06	11,03	.85	.88
Social Environment and past Relationship	30,38	6,25	.83	.80
Jealousy Perception	8,13	3,05	.83	.84
Self-Perception	7,11	2,90	.71	.67

As seen in Table 7, the Cronbach Alpha coefficient for the overall scale is .85. The Cronbach Alpha coefficients of Social Environment and Past Relationships, Jealousy Perception and Self Perception sub-dimensions are .83, .83 and .71, respectively.

Considering the McDonald Omega reliability coefficient, the omega value for the overall scale was found to be .88. When the sub-dimensions are examined, the omega value of the Social Environment and Past Relations dimension is .80, the omega value of the Jealousy Perception sub-dimension is .84, and the omega value of the Self-Perception sub-dimension is .67.

Table 8. Pearson Correlations for the JRRS Test-Retest

Scale	$\bar{x}$	SS	1	2
1 JRRS First Administration	3,152	0.780	-	.956**
2 JRRS Second Administration	3,157	0.659		-

As demonstrated in Table 8, there is a strong association between the first and second administration of the scale (.95; $r > .60$, $p < .01$), which means that the participants responded to the scale consistently at two different time points.

Discussion, Results and Suggestions for Further Study

Romantic jealousy is a complex emotion that has been extensively studied in the field of psychology. From an evolutionary perspective, jealousy can be seen as an adaptive emotion that helps individuals protect their romantic relationships from potential threats. It functions as a mechanism that alerts individuals to the possibility of a competitor or a partner's infidelity and encourages them to take action to protect their relationships (Attridge, 2013). At the same time, excessive or unfounded jealousy can damage romantic relationships, leading to conflict, insecurity, and even violence. Therefore, understanding the role that jealousy plays in romantic relationships and how to manage it in a healthy way is important. Developing a measurement tool that assesses the level of romantic jealousy can help produce more reliable and consistent results in research conducted in this field. However, it is important to consider cultural factors when developing such a tool. Therefore, this study aims to develop a measurement tool that is suitable for Turkish culture and can help determine the level of romantic jealousy.

In this study, a 50-item scale developed to measure the attitudes and perceptions of individuals over the age of 18 with or without a romantic relationship about romantic jealousy was applied to 500 participants and the data obtained from 400 individuals were analyzed. Since the data collection process coincided with the pandemic period, data were collected through online channels. Therefore, in some data, the answers proceeded as the same answer for each question, and these data were removed from the data set.

While developing the jealousy in romantic relationship scale, a literature review was conducted and the items were written considering Turkish culture. The 50-item item pool was reduced to 22 items after the first interview, and after the pilot study, the 16-item scale of Jealousy in romantic relationship was prepared. Both validity and reliability analysis were applied to the measurement tool. After the exploratory factor analysis, it was seen that the scale had a 3-dimensional structure. Considering the eigenvalues of the components and the explained variance, the first dimension explains 32.94% of the total variance, the second dimension explains 11.34% of the total variance, and the third dimension explains 9.21% of the total variance, and all dimensions explain 53.50% of the total variance. When this result is evaluated, it is seen that the scale of Jealousy in romantic relationship is a valid measurement tool to measure the romantic jealousy status of individuals.

In order to establish the criterion related validity, we examined the relationship between the Experiences in Close Relationships Scale-Short Form (ECRS-SF; Savcı & Aysan, 2016) and the JRRS. The results indicated a moderate relationship between the Anxious Attachment subdimension of the ECRS-SF and the JRRS as expected. Individuals who tended to feel more attached to their partners had higher jealousy scores on Anticipated Sexual Jealousy Scale as reported by Buunk (1982). It is possible that an individual with an anxious attachment style might have higher levels of jealousy as they tend to be worried about losing his/her partner or getting abandoned more often. Therefore, we might suggest that the moderate correlation between the Anxious Attachment and JRRS total scores is in line with the literature in terms of criterion validity.

The tools used to assess jealousy in romantic relationships often have at least two subdimensions. For instance, the Self-Report Jealousy Scale (Bringle et al., 1979) has three subdimensions. The internal consistency coefficients for the subdimensions ranged between .79 and .87 while it was .88 for the overall scale. The moderate correlation ($r = .36$) between being anxious and jealous is similar to the findings of the current study. The Interpersonal Jealousy Scale, which was developed by Mathes and Severa (1981), had an internal consistency of .92. The scale has a six-factor model which explained the %62,2 of the total variance. The Multidimensional Jealosy Scale (Pfeiffer & Wong, 1989) has been adapted to various cultures and used in Turkey as well. It has three subdimensions just like JRRS. The realibility coefficients ranged between .83 and .89 for the subdimensions. The Spouse Emotional Jealousy Scale (Kızıldağ & Yıldırım, 2017) might be given as example from Turkey. The scale, which was designed for married individuals, has three subdimensions, which is also similar to the JRRS. The model explained %59,75 of the total variance. The overall internal consistency coefficient was .95 and its subdimensions were satisfactorily realible as well. All these examples further supports the reliability and validity of the JRRS as it is consistent with previously developed scales.

Recommendations

This study focused on the development and validity of the jealousy scale in romantic relationships for individuals in Turkey. Future research may explore the generalizability of this scale to other cultures and countries. For this, the reliability and validity results of the scale in different populations can be evaluated and potential cultural differences in romantic jealousy can be investigated. Although there are three sub-dimensions

of the Romantic Jealousy Scale developed through this study, there may also be different factors contributing to the romantic jealousy experience. Future research may explore the potential impact of other variables, such as personality traits, socio-demographic factors, and relationship quality, on romantic jealousy. Due to the COVID-19 outbreak, data collection for this study was carried out through online channels. New research can compare the validity and reliability of data collected through online channels with data collected through traditional face-to-face methods. By addressing these suggestions, researchers can further develop and validate romantic jealousy scales that may better capture the complex nature of romantic jealousy and shed light on the mechanisms and consequences of this phenomenon. Compared to the JRRS with the Closely Relationship Experiences Scale-Short Form (ECRS-SF), future research could further explore the relationship between the JRRS and other established jealousy scales to assess convergent and divergent validity.

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Author (s) Contribution Rate
Both authors contributed equally to the writing of this article.

Conflicts of Interest
There was no conflict of interest during the study.

Ethical Approval
Ethical permission (03/2022-13/03) was obtained University Fatih Sultan Mehmet Vakıf University this research.

References

Al-Dehaiman, M. (2021). Jealousy and relationships. *Current Research in Psychology and Behavioral Science*, *2*(3), 1033-1034.

Arnett, J. J. (2003). Conceptions of the transition to adulthood among emerging adultsin American ethnic groups. *New Directions for Child and Adolescent Development*, *100*, 63–76. https://doi.org/10.1002/cd.7

Atak, H. & Taştan, N. (2012). Romantik ilişkiler ve aşk. *Psikiyatride Güncel Yaklaşımlar*, *4*(4), 520-546. doi:10.5455/cap.20120431

Atakay, C. (2014). Romantik yakın ilişkilerde şiddetin öncülleri. *Nesne psikoloji dergisi*, *2*(3), 1-9. doi: 10.7816/nesne-02-03-01

Attridge, M. (2013). Evolutionary perspectives on jealousy: Examining the adaptationist view. In J. H. Harvey, A. Wenzel, & S. Sprecher (Eds.), Handbook of jealousy: Theory, research, and multidisciplinary approaches (pp. 43-61). Wiley-Blackwell.

Bahtiyar, A., Bilge, C. (2017). Fen öğretmen adaylarının bilimsel süreç becerileri ile bilimsel araştırmaya yönelik tutumlarının incelenmesi. *Dokuz EylülÜniversitesi Buca Eğitim Fakültesi Dergisi*, (42), 47-58.

Bringle, R. G., Boebinger, K. L. (1990). Jealousy and the 'third' person in the love triangle. *Journal of Social and Personal Relationships, 7*(1), 119–133. https://doi.org/10.1177/0265407590071007

Bringle, R. G., Roach, S., Andler, C., & Evenbeck, S. (1979). Measuring the intensity of jealousy reactions. Catalog of Selected Documents in Psychology, 9, 23-24.

Buunk, B. (1982). Anticipated sexual jealousy: Its relationship to self-esteem, dependency, and ,reciprocity. *Personality and Social Psychology Bulletin, 8*(2), 310-316. https://doi.org/10.1177/0146167282082019

Büyüköztürk, Ş. (2002). Faktör analizi: Temel kavramlar ve ölçek geliştirmede kullanımı. *Kuram ve Uygulamada Eğitim Yönetimi*, *32*(32), 470-483.

Clanton, G. (1996). A sociology of jealousy. *International Journal of Sociology andSocial Policy*, *16*(9/10), 171-189. https://doi.org/10.1108/eb013274

Costa, A. L., Sophia, E. C., Sanches, C. , Tavares, H., Zilberman, M. L. (2015). Pathological jealousy: Romantic relationship characteristics, emotional and personality aspects, and social adjustment. *Journal Of Affective Disorders*, *174*, 38-44.https://doi.org/10.1016/j.jad.2014.11.017

Demirtaş, H. A., Dönmez, A. (2006). Yakın ilişkilerde kıskançlık: Bireysel, ilişkisel ve durumsal değişkenler, *Türk Psikiyatri Dergisi*, *17*(3), 181- 191.

Ellis, C., Weinstein, E. (1986). Jealousy and the social psychology of emotional experience. *Journal of Social and Personal Relationships*, *3*(3), 337- 357. https://doi.org/10.1177/0265407586033006

Elphinston, R. A., Feeney, J. A., Noller, P. (2011). Measuring romantic jealousy: Validation of the multidimensional jealousy scale in Australian samples. *Australian journal of Psychology*, *63*(4), 243-251.https://doi.org/10.1111/j.1742-9536.2011.00026.x

Hooper, D., Coughlan, J., Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53-60.

Kaplan, N., Tasa, H. (2022). Bireylerin toplumsal cinsiyet rollerine ilişkin tutumları ile romantik kıskançlıkları arasındaki ilişki. *Uluslararası Anadolu Sosyal Bilimler Dergisi*, *6*(2), 678-691.

Kılıç, S. (2016). Cronbach'ın alfa güvenirlik katsayısı. *Journal of Mood Disorders*, *6*(1), 47-48.

Kızıldağ, S., Yıldırım, İ. (2017). Developing Spouse Emotional Jealousy Scale. *Educational Sciences: Theory & Practice*, 17, 175–190. doi: 10.12738/estp.2017.1.2441

Kline P. (1993). *The handbook of psychological testing* (2nd ed.). Routledge. https://doi.org/10.4324/9781315812274

Marazziti, D., Di Nasso, E., Masala, I., Baroni, S., Abelli, M., Mengali, F., Rucci, P. (2003). Normal and obsessional jealousy: a study of a population of young adults. *European Psychiatry*, *18*(3), 106-111. https://doi.org/10.1016/S0924-9338(03)00024-5

Mathes, E. W., Severa, N. (1981). Jealousy, romantic love, and liking: Theoretical considerations and preliminary scale development. *Psychological Reports*, 49(1), 23-31. https://doi.org/10.2466/pr0.1981.49.1.23

Mattingly, B. A., Whitson, D., Mattingly, M. J. (2012). Development of the romantic jealousy-induction scale and the motives for inducing romantic jealousy scale. *Current Psychology*, *31*(3), 263-281. doi: 10.1007/s12144-012-9144-3

Nazlı, E., Karaman, O. (2021). Romantik ilişkide kendini açma düzeyi ile kıskançlıkta gösterilen iletişim tepkileri arasındaki ilişkinin incelenmesi. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, *22*(3), 2659-2676. doi:10.17679/inuefd.955037

Önder, S. (2019). *Romantik kıskançlık, aldatmaya yönelik niyet ve mutluluk* [Yüksek Lisans Tezi]. Yakın Doğu Üniversitesi, KKTC.

Özdamar, K. (1999). *Paket programlar ile istatistiksel veri analiz*. Kaan Kitabevi

Parrott, W. G. (1991). The emotional experience of envy and jealousy. P. Salovey (Ed.), *The psychology of jealousy and envy* (3–30). Guilford Press.

Pfeiffer, S. M., Wong, P. T. (1989). Multidimensional jealousy. *Journal of social and personal relationships*, 6(2), 181-196.

Pines, A., Aronson, E. (1983). Antecedents, correlates, and consequences of sexual jealousy. *Journal of Personality*, *51*(1), 108-136. https://doi.org/10.1111/j.1467-6494.1983.tb00857.x

Pines, A. M., Friedman, A. (1998). Gender differences in romantic jealousy, *The Journal of Social Psychology*, *138*(1), 54-71. https://doi.org/10.1080/00224549809600353

Sharpsteen, D. J. Kirkpatrick, L. A. (1997). Romantic jealousy and adult romantic attachment. *Journal of Personality and Socialpsychology*, *72*(3), 627. https://doi.org/10.1037/0022-3514.72.3.627

Sheets, V. L. Fredendall, L. L. & Claypool, H. M. (1997). Jealousy evocation, partner reassurance, and relationship stability: An exploration of the potential benefits of jealousy. *Evolution and Human Behavior*, *18*(6), 387-402. https://doi.org/10.1016/S1090-5138(97)00088-3

Sardelić, M., Perak, B. (2021). Jealousy vs envy: european cultural background and croatian linguistic examplesand examples. *Collegium antropologicum*, *45*(1), 55-66.

Savcı, M., Aysan, F. (2006). Yakın ilişkilerde yaşantılar ölçeği kısa formunun Türkçe uyarlaması: Geçerlik ve güvenirlik çalışması, *VII. UluslararasıEğitim Kongresi*, Çanakkale, Türkiye: 5-8 Mayıs

Sherman, R. & Fredman, N. (2013). Marital communication and intimacy scales. Handbook of measurements for marriage and family therapy (pp. 101- 127).New York: Routledge.

Tortamış, M. (2014). *Evli bireylerde romantik kıskançlık türü ve aldatma eğiliminin şema terapi modeli çerçevesinde değerlendirilmesi.* (Master dissertation). Hacettepe Üniversitesi, Ankara.

Viswanathan, M. (2010). Understanding the ıntangibles of measurement in the social. Walford, G., Tucker, E., Viswanathan, M. (Ed.), *The SAGE handbook of measurement* (pp. 285-313). Londra: SAGE Publications.

Yaşlıoğlu, M. M. (2017). Sosyal bilimlerde faktör analizi ve geçerlilik: Keşfedici ve doğrulayıcı faktör analizlerinin kullanılması. *İstanbul Üniversitesi İşletme Fakültesi Dergisi*, *46*, 74-85.

Wreen, M. J. (1989). Jealousy. *Nous*, 23(5), 635-652. https://doi.org/10.2307/2216005

White, G. L. (1981). A model of romantic jealousy. *Motivation and Emotion*, *5*(4), 295-310.

Appendix 1. Romantic Jealousy in Relationships Scale (JRRS)

	MADDELER	Hiç Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Tamamen Katılıyorum
1	Partnerimin bir başkasıyla fiziksel olarak yakınlaşmasını kıskanırım.					
2	Partnerimin yanımdayken gizli gizli mesajlaşmasından rahatsız olurum.					
3	Partnerimle beraber eski sevgilisinin olduğu bir ortamda bulunmaktan rahatsız olurum.					
4	Partnerimin bir başkasına duyduğu beğeniyi ifade etmesinden rahatsız olurum					
5	Partnerim arkadaşları ile dışarı çıktıysa ne yaptığını öğrenmek için görüntülü ararım.					
6	Partnerim eski ilişkisinden bahsederse rahatsız olurum.					
7	Partnerimin bir ortamda hem cinsime iltifat etmesinden hoşlanmam.					
8	Partnerimin beğeni duyduğu kişilere benzemek için çaba sarf ederim.					
9	İlişkimizde kendime güvenmediğim konularda, partnerimin başkasıyla iletişim kurmasından rahatsız olurum.					
10	Partnerimin bana seslenirken farkında olmadan başka bir isim kullanmasından rahatsız olurum.					
11	Partnerime duyduğum kıskançlık, bağlılığımızı güçlendirir.					
12	Partnerime duyduğum kıskançlık, ilişkimizin monotonlaşmasını önler.					
13	Partnerimin kalabalık bir ortamda başkasıyla ilgilenmesi beni rahatsız eder.					
14	Partnerimi kıskanmam ona değer verdiğimin göstergesidir.					
15	Partnerimi kıskandığım zaman sosyal medya hesaplarını kontrol ederim.					
16	Partnerimi kıskanmam günlük hayatımı olumsuz etkiler.					

Variance of Teacher Identity in First-Year School Teachers: The Roles of Gender, Taught Subject, and Grade Level Taught

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Abstract

Although the antecedents of teacher identity have been well investigated over decades, the role of demographic variables in teacher identity variance has received relatively little research attention. The study explored how teacher identity (grounded in a four-indicator model comprising occupational commitment, teacher self-efficacy, job satisfaction, and motivation to teach) might differ on three key demographics: gender, taught subject, and grade level taught. To reduce possible noise from other demographic constructs (e.g., age, tenure, and job level), participants were recruited from a cohort of 464 first-year school teachers in Mainland China. Using multiple analytic techniques, findings indicated that female teachers were less committed to the teaching occupation than were male teachers. Those teaching social sciences in primary schools showed lower levels of occupational commitment and teacher self-efficacy than did those teaching sciences at secondary schools. Implications and suggestions are provided.

Keywords: Teacher identity, Gender, Taught subject, Grade level taught

Introduction

Teacher identity is teachers' self-awareness of who they are as professionals in the teaching occupation (Timoštšuk & Ugaste, 2010). Researchers argue that teacher identity stands at the heart of the teaching profession and makes a difference in beginning teachers' career development (Hong, 2010; Sachs, 2005). Much research (e.g., Day et al., 2007; Robinson & McMillan, 2006; Stenhouse, 1975) has thus mainly focused on how teacher identity is held accountable for outcome variables (e.g., curriculum reforms, student achievement, and policy implementation). Although a handful of studies (e.g., Beijaard et al., 2000; Kelchtermans, 2005; Tsui, 2007) explore either internal or external antecedents of teacher identity, such as emotions and personal life stories as internal constructs or learning environment and school context as external constructs, the role of demographic variables in teacher identity is still relatively under-researched.

Some prior research (e.g., Aftab & Khatoon, 2012; Sadeghi et al., 2021; Yucel & Bektas, 2012) has recognized demographic constructs (e.g., age, gender, tenure, and job level) as potential predictors of job satisfaction, organizational commitment, or teaching agency. For example, Yucel and Bektas (2012) found that teachers' age moderated the relationship between their job satisfaction and organizational commitment. Mason and Chik (2020) observed that language teachers' gender identities interacted with their age identities, thus shaping their teacher identities. However, given that interpretations and conceptualizations of teacher identity vary in previous studies, there is still a dearth of comprehensive understanding of teacher identity and its variance grounded in important demographic variables.

The teaching profession is a female-dominated field, particularly at primary and secondary education levels (Basu & Kundu, 2022). Also, as noted by some researchers (Helms, 1998), secondary school teachers know

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their subject matter better than primary teachers, who do so with the children. The current study therefore aimed to explore whether and how teacher identity might differ based on three key demographics, i.e., gender, taught subject, and grade level taught. Such knowledge is important simply because school-level policy and guidance could be provided catering to the specifics of different teacher groups. Among others, early-career teachers (15 years of teaching experience) warrant first aid given that they are faced with extremely harsh situations of sink or swim (Varah et al., 1986). To minimize the possible effect of other confounding demographic variables like age, tenure, or job level, this study surveyed a cohort of nearly 500 first-year school teachers in the Chinese Mainland using self-reported data and multiple analytic strategies.

Literature Review

Conceptualization of teacher identity

Research on teacher identity is fairly recent, spanning merely two decades (Cox et al., 2012). Conceptualizations of teacher identity in the literature generally adopt three lenses: a) the ontological lens; b) the lens of professionalism; and c) the lens of interactionism.

Following the ontological lens, the role of individual differences in teacher identity receives attention. Kelchtermans (1993) compares teacher identity to the professional self, which comprises five components: "self-image", "self-esteem", "job motivation", "task perception", and "future perspective" (pp. 449–450). Cooper and Olson (1996) assert that teacher identity arises from teachers' personal knowledge of pupils and their own constructions of knowledge. Echoing Cooper and Olsen's (1996) point, Coldron and Smith (1999) purport that being a teacher is a matter of being seen as a teacher by himself or herself and by others" (p. 712). Obviously, conceptualizations in this line allow for teachers' inner traits and self-construction but overlook teachers' professional aspects (e.g., class management, teaching methods, and practical expertise).

Through the lens of professionalism, the term *teachers' professional identity* is favored (Anha, 2013; Beijaard et al., 2004). Tickle (2000) proposes the term "professional characteristics" as a substitute for teacher identity. Beijaard (1995) categories teacher identity into three parts: subject matter, relationship with pupils, and self-conception of the teaching role. Some other researchers approach this professional knowledge from a personal angle. For example, Clandinin (1992) argues that teachers' professional knowledge survived a process of construction and reconstruction as they "live out... [their] stories and retell and relive them through processes of reflection" (p. 125). However, the issue of how professional identity relates to personal practical knowledge is left unaddressed.

Through the interactionist lens, conceptualizations of teacher identity are liable to relate individual differences to social factors. Lasky (2005) surmises that teacher identity is a self-definition of commitment, knowledge, values, and beliefs, the evolution of which is apt to be shaped by school context, curriculum change, and politics. In a supportive tone, Menter (2010) notes that teacher identity should be looked at from both sociological and psychological perspectives. Day (2011) also contends that a stabilized sense of professional identity relates to teachers' abilities in terms of emotional management. Noticeably, though personal and contextual factors intertwine in this string, professional aspects of teachers, to some degree, find no place in these conceptualizations.

Synthesizing conceptualizations through the three aforementioned lenses, the current study adopted Dworet's (1996) conceptualization that teacher identity is "different views that individuals have about themselves as teachers in general and how [these views change] over time and in different contexts" (p. 101). This conceptualization takes into account teachers' inner affiliation with the teaching profession (self-sameness), differentiation from non-teachers (self-otherness), and fluctuations of self-identification as a result of contextual and temporal changes.

A four-indicator model of teacher identity

As suggested in the literature, teacher identity is so complex and varied that an all-inclusive measure is unlikely. Alternatively, a vast body of research has examined teacher identity as a composite of different selected components, such as teacher beliefs, cognitive knowledge, agency, and teacher role (Burn, 2007; Graham & Phelps, 2003). To profile teacher identity in a comprehensive landscape, Canrinus et al. (2012) conceptualize a model with four principal constructs: teacher self-efficacy, occupational commitment, job satisfaction, and motivation to teach. The current study adopted this model of teacher identity for three reasons.

To begin with, this study looked at teacher identity as a composite construct entailing personal, professional, and contextual dimensions. This compound comes to terms with Canrinus and colleagues' (2012) claim that these four aforementioned indicators are "constructs currently under influence of both the person and context in which the teachers work" (p. 116). Second, Canrinus et al.'s (2012) choice of these four indicators is in consonance with Day's (2002) finding. Through a meta-analysis of research on teacher identity studies over two decades, Day (2002) found that "to understand teachers' professionalism, it is necessary to take account of the importance to these of self-efficacy, the level of motivation, job satisfaction, and commitment, and the relationship between these and effectiveness" (p. 684). Third, these four indicators have been intensively studied separately or in diverse combinations across decades, relating to teacher behaviors, teachers' professional development, students' academic achievements, and teacher burnout (Badri et al., 2013; Federici & Skaalvik, 2012).

Li (2016) later validated the robustness and internal consistency of this four-indicator model. Recently, Li et al. (2022) verified the measurement invariance of this model over time. In the current study, teacher self-efficacy is conceptualized as teachers' perceived competence in terms of executing and managing classroom instructions, dealing with various relationships, and getting involved in making decisions. Friedman and Kass's (2002) theorization was adopted, which taps into teacher self-efficacy from three aspects: relationship self-efficacy, classroom self-efficacy, and leadership self-efficacy. For occupational commitment, this study followed one of the best-established theoretical models, i.e., the three-component model proposed by Meyer and colleagues (1991; 1993): normative commitment, affective commitment, and continuance commitment. Normative commitment refers to a sense of accountability and obligation to an organization. Affective commitment delineates "the employee's emotional attachment to, identification with, and involvement in" (1991, p. 67) an occupation. Continuance commitment concerns a weighing of opportunity cost (the benefit lost due to the choice of an alternate) and sunk cost (the cost that has been paid and cannot be recovered) if leaving an organization. As regards job satisfaction, Hoppock's (1935) classical definition was followed, which understands it as "any combination of psychological, physiological, and environmental circumstances that causes a person truthfully to say, 'I am satisfied with my job'" (p. 47). This definition highlights the interactions between individual teachers and the work context (Bakker et al., 2003). Finally, motivation was referred to as a compound of interrelated emotions and beliefs that invoke, concentrate, and maintain one's engagement in an activity. This conceptualization, on the one hand, recognizes motivation as a mindset or attitude (Evans, 1998), and on the other hand, demonstrates that motivation is a continuum of engagement varying in depth and duration (Sinclair et al., 2006).

Gender differences in teacher identity

Gender differences have been found in relation to almost all the four indicators of teacher identity conceptualized in the current study. However, the findings are not consistent. For example, Aydin et al. (2011) and (2012) found that male teachers scored higher in both overall organizational commitment and job satisfaction. Their studies carried out meta-analytic strategies on these between 2005 and 2009, involving over 1,800 teachers in Turkey. Day et al. (2006) also observed that in England, male teachers' overall view of their continuing professional development (a construct of teacher self-efficacy) was minimally more positive than their female counterparts. Similarly, Klassen and Chiu's (2010) study found that female teachers perceived lower classroom management self-efficacy than did their male counterparts. Their study sampled 1,430 practicing teachers in Canada. Strun and Murray's (2019) study in the USA concluded that male teachers were superior to females in their abilities to lead and manage classroom teaching. However, Sloane and Williams' (2000) study in the UK indicated that women teachers were more satisfied with their teaching jobs than men, in spite of lower pay. In Çoğaltay's (2015) meta-analysis, which involved 30 studies on 11,724 teachers in Turkey, teachers' occupational commitment was not found to differ by gender. In Moses et al.'s (2016) study, Tanzanian female student-teachers reported significantly stronger commitment to teaching than did their male counterparts. These inconsistent findings in the literature warrant further investigation into the role of gender in teacher identity.

Disciplinary differences in teacher identity

Little is reported on subject-specific teacher identity differences in the literature. Findings are inconsistent, moreover. For example, Joolideh and Yshodhara's (2009) study revealed no significant taught-subject difference in organizational commitment among high school teachers in India and Iran. However, Busch et al. (1998) found that in Norway, participants working in the science field (i.e., engineering) had significantly lower occupational commitment than those in the social sciences field (i.e., nursing and teacher education). They further observed that those in the nursing program were significantly more satisfied with their jobs than their counterparts in the teacher education program, while those in the teacher education and nursing programs scored

significantly higher in teacher-student self-efficacy and occupational commitment than participants in the engineering programs. Contrary to Busch et al.'s (1998) finding, Gökyer (2018) found that in Turkey, high school science teachers exhibited higher levels of commitment in comparison to their counterparts teaching social sciences. Moreover, prior studies are either small-scale case studies or have mainly focused on research practice differences in different disciplines while practically overlooking teachers' perceptions of their own teaching performance and motivation to teach (Neumann, 2001; Nevgi et al., 2004).

Grade level differences in teacher identity

The role of grade level taught (e.g., primary or secondary school levels) in teacher identity has not received much research attention, either. Of the limited research in the literature, findings are still inconsistent. For example, in Hustler et al.'s (2003) study in England, primary school teachers reported having a bigger say in participating in setting the school agenda (i.e., leadership self-efficacy) than did those teaching in secondary school. Likewise, Day et al.'s (2006) study indicated that British primary school teachers exhibited higher efficacy rates than secondary school teachers in terms of continuing professional development. Differently, Marston's study in the USA (2010) revealed that, in comparison to university academics, primary school teachers tended to have a lower level of perceived rapport with administrators (i.e., leadership and relationship self-efficacies). Marston did not further find a significant difference in job satisfaction among three levels of teachers (i.e., elementary, high school, and college professors). However, existing studies in the literature are limited in number and do not compare across elementary, junior high, and senior high school levels.

Methods

Ethical considerations

The current was permitted by the Human Research Ethics Committee for Non-Clinical Faculties at the researchers' university. All the participants were aged above 18. Their rights were legitimized through their endorsement on a consent form that provided thorough knowledge about their benefits and rights upon participation, as well as about the intent and duration of the present research. Moreover, the participants were reassured about safety concerns (e.g., how the inventories would be stored and how their responses would be kept confidential). Finally, it was also articulated that participation in the current study was totally voluntary; as such, the participants' decision to withdraw at any time would have no consequence at all.

Participants and procedures

Data were collected via email among 738 first-year school teachers in Mainland China. A total of 464 (122 males and 342 females; aged 22.74 ± .65 years) returned questionnaires were found valid. They finished their first year of teaching in over 400 different schools. Among them, 297 (64%) were teaching in senior high schools, 144 (31%) in junior high schools, and 23 (5%) in elementary schools. The basic profiles of the participants are shown in Table 1.

Table 1. Profile of participants

		N	%
Gender	male	122	26.34
	female	342	73.73
Taught subject	social sciences	242	52.24
	science	222	47.78
Grade level taught	primary schools	23	5.01
	junior high schools	144	31.09
	senior high schools	297	64.04
Total		464	100

Measure

Demographics

In the meantime, data on gender, grade level taught, and taught subject were collected. Based on literature reviewed (Chan et al., 2010; de Jong et al., 2013), grade level taught comprised three layers (primary, junior high, and senior high schools), and taught subjects were aggregated into two major domains, i.e., science

(including chemistry, physics, computer science, and math) and social sciences (including history, English, Chinese, and politics). Details can be seen in Table 1.

The inventory for teacher identity
The Inventory for Teacher Identity (ITI; Canrinus et al., 2011) comprised 35 items measuring four dimensions of teacher identity. The first dimension assessed teacher self-efficacy with 18 items: relationship self-efficacy (6 items), classroom self-efficacy (6 items), and leadership self-efficacy (6 items). The second dimension consisted of 12 items measuring occupational commitment: continuance commitment (3 items), normative commitment (3 items), and affective commitment (3 items). The third dimension was used four times to evaluate job satisfaction. The fourth dimension was a single-item part determining teachers' motivation to teach; it is of note that the stand-alone single item was originally used to capture the change of teacher identity in Canrinus et al.'s (2012) study with good performance; we thus also followed suit. The ITI has exhibited robust internal consistency ranging from .70 to .90 (Li, 2016; Li et al., 2022). Details of the dimension distributions can be seen in Table 2.

Table 2. Item distribution of the inventory for teacher identity

Subscale		Item (No.)	Example Item
Teacher self-efficacy	Relationship self-efficacy	6	I believe I enjoy a good rapport with the administrators at school.
	Leadership self-efficacy	6	I have no difficulty making demands of the school administration.
	Classroom self-efficacy	6	I think I can be very creative in my work with students.
Occupational commitment	Affective commitment	4	I am proud to be in the teaching profession.
	Continuance commitment	4	Changing professions now would be difficult for me to do.
	Normative commitment	4	I would feel guilty if I left teaching.
Job satisfaction		4	Working as a teacher is extremely rewarding.
Motivation to teach		1	I have a drive for the teaching job.

Data analysis

Data collected at the two measurement occasions were analyzed via SPSS 22.0. First, data were screened for accuracy, missing data, outliers, and univariate normality (Tabachnick & Fidell, 2013). Second, the inventory was validated. Regarding internal construct reliability, rather than Cronbach's coefficient alpha, the composite reliability (CR) was calculated, which represents comparatively true reliability that might otherwise be underestimated by Cronbach's α (Hair et al., 2010). The cut-off score of CR is usually .70 (Hair et al., 2010). For validity, a CFA was performed for the ITI (Van Prooijen & Van Der Kloot, 2001).

To explore possible differences based on demographic factors (i.e., gender, taught subject, and grade), a two-step analytic procedure was performed following Meyers et al.'s (2013) recommended approach. First, a series of one-way MANOVA were performed on the eight key variable dimensions. Next, two measures of post hoc analyses were adopted only if significant differences were revealed. One was an independent sample t-test to look into gender and teach subject differences in these dimensions. The other was multiple-group comparison for grade level taught, where Bonferroni correction was adopted to reduce family-wise Type I error, as suggested by many researchers (e.g., Hair et al., 2010; Tabachnick & Fidell, 2013). Significance levels were hence adjusted by dividing the alpha value (generally .05) by the number of comparisons (α/n).

Results

Descriptive statistics

As summarized in Table 3, the data collected by the ITI were normally distributed, where values of skewness and kurtosis were mostly negative and mean values were generally above the middle point: skewness = -.50 ~ .34; kurtosis = -.61 ~ .34; mean = 2.84 ~ 4.66.

Table 3. Descriptive statistics on the ITI dimensions

Teacher identity	Range	Mean	SD	Skewness	Kurtosis
job satisfaction	1.00-6.50	2.99	1.23	.34	-.61
affective commitment	1.00-7.00	4.19	1.42	-.13	-.56
continuance commitment	1.00-7.00	4.09	1.27	-.21	-.19
normative commitment	1.00-7.00	4.28	1.32	-.11	-.41

classroom self-efficacy	1.33-7.00	4.53	.94	-.27	.34
leadership self-efficacy	1.00-6.50	2.84	1.32	.50	-.48
relationship self-efficacy	1.67-7.00	4.83	.96	-.23	-.15
level of motivation	1.00-7.00	4.66	1.44	-.32	-.32

Psychometric properties

Results of the CFA yielded a marginally acceptable model fit: x^2 (506, $N = 464$) = 1379.56, $p < .001$, GFI= .84, RMSEA = .06, CFI = .91, and NFI = .87. Minor modifications were therefore executed, where covariance was added to error terms of four pairs of items (i.e., Items 9 and 10; Items 31 and 34; Items 23 and 24; Items 29 and 30), for the x^2 values to drop noticeably, for example, by 85.80 when setting free error terms of Items 9 and 10. This time, model fit improved: x^2 (502, $N = 464$) = 1157.71, $p < .001$, GFI = .88, RMSEA = .05, CFI = .93, and NFI = .90. The CR values were .85 (job satisfaction), .93 (affective commitment), .78 (continuance commitment), .84 (normative commitment), .90 (classroom self-efficacy), .94 (leadership self-efficacy), and .78 (relationship self-efficacy).

Demographic differences in teacher identity

As Table 4 shows, statistically significant gender differences were identified in teacher identity ($F_{8, 455} = 4.42$; Wilk's $\lambda = .93$; $p < .001$; partial $\eta^2 = .07$). Results of *post hoc* analysis found that male participants scored higher on two scales (i.e., job satisfaction and continuance commitment) and did so on two other scales (i.e., classroom self-efficacy and leadership self-efficacy).

Statistically significant differences were also found arising from teacher identity ($F_{8, 455} = 1.98$; Wilk's $\lambda = .97$; $p = .047$; partial $\eta^2 = .05$). Independent sample t-tests that followed confirmed taught subject differences in affective commitment and continuance commitment. Specifically, participants teaching science scored significantly higher in both of the two dimensions than did their counterparts teaching social sciences.

Grade level taught statistically contributed to four dimensions of teacher identity ($F_{16, 908} = 2.23$; Wilk's $\lambda = .93$; $p = .004$; partial $\eta^2 = .04$). However, in *post hoc* analyses, with the significance level corrected to roughly .017 (.05/3), significant differences were further confirmed in only two dimensions: normative commitment and relationship self-efficacy. Specifically, the participants teaching in primary schools scored lower on the scale for normative commitment, compared with their counterparts teaching in either junior high schools ($M_{difference} = .92$; $p = .005$) or senior high schools ($M_{difference} = .82$; $p = .011$). On the scale for relationship self-efficacy, however, the participants teaching in junior high school scored higher than did those in senior high school ($M_{difference} = .29$; $p = .009$).

Table 4. Differences in teacher identity based on gender, taught subject, and grade level taught

Source	Teacher Identity	Sum of Squares	df	Mean Square	F	Partial η^2	*Post hoc*
Gender	Job satisfaction	16.44	1	16.44	11.09	.02***	Male > Female
	Continuance commitment	7.19	1	7.19	4.47	.01*	
Taught subject	Classroom self-efficacy	8.32	1	8.32	9.50	.02**	
	Leadership self-efficacy	33.17	1	33.17	19.91	.04***	
	Affective commitment	11.77	1	11.77	5.87	.01**	Science > Social sciences
	Continuance commitment	14.95	1	14.95	9.40	.02**	
Grade level taught	Normative commitment	16.90	2	8.45	4.97	.02**	Primary < Junior high
		8.05	2	4.03	4.47	.02**	
	Relationship self-efficacy						Junior high > Senior high

*Note: * $p < .05$, ** $p < .01$; *** $p < .001$.*

Discussion

This study explored whether gender, taught subject, and grade level would make a difference in teachers' perceived teacher identity in terms of teacher self-efficacy, occupational commitment, job satisfaction, and motivation to teach.

Not surprisingly, significant gender-based differences were observed. This finding was largely in agreement with previous studies where gender was reported to result in differences in teaching-related constructs such as organizational behaviors, teacher effectiveness, and job satisfaction (Aydin et al., 2012; Klassen & Chiu, 2010; Sloane & Williams, 2000). This study further found that male first-year school teachers reported higher job satisfaction, continuance commitment, classroom self-efficacy, and leadership self-efficacy than their female counterparts. This finding partially lends support to Martinez-Leon et al.'s (2018) finding that women teachers tend to report less satisfaction with their teaching jobs than men. On the one hand, problems challenging female school teachers are much more severe in comparison to their male colleagues, including but not limited to workload, emotional stress, work-family imbalance, and shocks from expectation-reality gaps in the teaching career (Kim & Cho, 2014; Voss & Kunter, 2019). At the same time, the onset of the teaching career is oftentimes the period of time when female teachers form families, prepare for pregnancy, or even deliver babies. All these pressures put together add to female teachers' physical and psychological burden, resulting in their low intention to stay in the teaching profession. On the other hand, partly due to the socially biased value attached to males, particularly in such a Confucian Heritage Culture (CHC) in China (Song et al., 2020), female first-year school teachers often find it difficult to win due respect and recognition for their value and abilities. One fact is that, in the CHC-featured schools, male teachers are in general more often trusted with important tasks (e.g., delivering demonstration instructions or designing teaching calendars) or important positions (e.g., head teachers or school team leaders). Lacking trust and opportunities to execute teaching strategies and practice decision-making agency, female teachers are inclined to feel less efficacious in managing classroom instructions and establishing leadership.

The current study found that taught subjects contributed to first-year school teachers' perceived identity on the subscales of affective commitment and continuance commitment. Partly in agreement with Gökyer's (2018) prior finding, science teachers (i.e., those teaching math, physics, chemistry, and computer science) scored higher on these two subscales than did social sciences teachers (i.e., those teaching English, Chinese, history, and politics). Although there is no immediate empirical evidence from the literature, one possibility is that science teachers tend to establish stronger subject affiliations than do social science teachers. Little (1993) found that such academic fields as science often enjoy a higher status stemming from their importance for tertiary institutions. Science teachers thus tend to be proud of their subject specialization and develop a loyalty to what they have learned from universities that closely relates to what they are teaching in schools. According to Little (1993), this subject-based pride and affiliation is a powerful component of professional community that can extend to working organizations, thus giving rise to science teachers' standing commitment to the teaching occupation. Another possibility relates to the Chinese context of educational settings. In higher education, science subjects generally demand conscientiousness and rigor in labs or fields, whereas social science subjects are often associated with repetition and rote learning. According to effort-recovery theory (Meijman & Mulder, 1998), intensive efforts invested to prepare science students for future science teaching careers can relatively arouse their commitment to the occupation where they are executing their science specialization.

Findings also evidenced that teacher identity perceived by first-year teachers varied across grade levels taught. Interestingly, primary school teachers reported having a lower normative commitment than junior high school teachers. The literature lacks empirical evidence to support this finding; however, there is still one possible explanation in terms of work stress and social status. On the one hand, prior studies have repeatedly found that teachers in primary schools perceived a significantly higher stress level than those in secondary schools (Chan et al., 2010; Ling, 2006; Sutton, 1984). Major reasons lie with class cuts and surplus teachers, which might lead to career instability. On the other hand, in the Chinese context, primary school teachers enjoy a relatively lower social status in comparison to those in secondary schools. This is mainly because education in China, in spite of waves of efforts, is still examination-oriented, so that children's academic performance in elementary education is less worrying a source than *gaokao* (the national matriculation exam in the Chinese Mainland) for parents on the whole (Dello-Iacovo, 2009; Li et al., 2019). It is understandable that primary school teachers find themselves in less advantageous positions, receiving less social attention and recognition, so that their emotional attachment to the teaching career and schools might be relatively weaker. In a similar vein, *gaokao* consumes most of the time and passion of teachers of senior high schools, so much so that dealing with all sorts of relationships (with colleagues or students) is not prioritized, and their relationship self-efficacy might have been compromised in consequence. This can at least partly explain why senior school teachers were found to perceive lower relationship self-efficacy than junior school teachers in the current study.

Conclusion

This study aimed to investigate teacher identity differences grounded in gender, taught subject, and grade level. Theoretically, findings contributed to the relevant literature in at least two ways. On the one hand, consistent with previous research (Canrinus et al., 2012; Li, 2016; Li et al., 2022), empirical evidence showed that teacher identity could be comprehensively understood using a four-indicator model. On the other hand, there were marked gendered and subject-specific differences in teacher identity. A distinct disparity also appeared for

teachers teaching at different levels of school. One may question whether these findings are reflective of true variance in teacher identity rather than statistical chance. However, this worry is not necessary in that composite reliability (CR) was adopted to avoid underestimated calculations by Cronbach's (Hair et al., 2010), while Bonferroni correction was undertaken to minimize Type I error (Tabachnick & Fidell, 2013).

To build and retain a strong teacher identity, some practical implications can be suggested. For example, job resources (e.g., collegial support, supervisory guidance, or upward opportunities) should be made immediately accessible to female teachers, particularly at the onset of the teaching career. Advice and support for female teachers' career development and work-family balance should be provided promptly. Equally important, social science subjects (e.g., language, history, or the arts) should be given due importance and recognition society-wide so that teacher candidates at universities can establish a necessary pride in and loyalty to their subject specialism that can extend well into their whole teaching career. Last but not least, policymakers and administrators of varying levels should take measures to strengthen teachers' identification with and emotional attachment to elementary education through, for example, underscoring the importance of elementary education for the average household, the education landscape, and society as a whole, or minimizing the impact of exam orientation so that attention could be at least partially diverted to genuine quality education.

Despite the merits above, there are some limitations to this study. For example, heavy reliance was placed on self-reported data that might relatively lack credibility. Other methods (e.g., interview or observation) could be included in future research for triangulable evidence. As another example, only three demographic variables were investigated in terms of their role in teacher identity, while other equally important demographics (e.g., marital status or social economic status) or individual difference constructs (e.g., personality traits or vocational interest) could also be taken into account in the future.

Author (s) Contribution Rate

All researchers contributed at every stage of the research.

Conflicts of Interest

We declare that we have no financial and personal relationships with other people or organizations that can inappropriately influence our work. Also, there is no professional or other personal interest of any nature or kind in any product, service and/or company that could be construed as influencing the position presented in, or the review of, the manuscript entitled *Variance of Teacher Identity in First-Year School Teachers: The Role of Gender, Taught Subject, and Grade Level Taught*.

Ethical Approval

The research presented in this article was carried out with due consideration to all relevant ethical issues and was approved by the Human Research Ethics Committee at Southwest University.

References

Aftab, M., & Khatoon, T. (2012). Demographic differences and occupational stress of secondary school teachers. *European Scientific Journal*, *8*(5), 159-175. https://doi.org/10.19044/esj.2012.v8n5p%25p

Anha, D. T. K. (2013). Identity in activity: Examining teacher professional identity formation in the paired-placement of student teachers. *Teaching and Teacher Education*, *30*, 47-59. https://doi.org/10.1016/j.tate.2012.10.006

Aydin, A., Sarier, Y., & Uysal, S. (2011). The effect of gender on organizational commitment of teachers: A meta analytic analysis. *Educational Sciences: Theory and Practice*, *11*(2), 628-632.

Aydin, A., Uysal, S., & Sarier, Y. (2012). The effect of gender on job satisfaction of teachers: A meta-analysis study. *Procedia-Social and Behavioral Sciences*, *46*, 356-362. https://doi.org/10.1016/j.sbspro.2012.05.122

Badri, M. A., Mohaidat, J., Ferrandino, V., & El Mourad, T. (2013). The social cognitive model of job satisfaction among teachers: Testing and validation. *International Journal of Educational Research*, *57*, 12-24. https://doi.org/10.1016/j.ijer.2012.10.007

Bakker, A. B., Demerouti, E., de Boer, E., & Schaufeli, W. B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior*, *62*(2), 341-356. https://doi.org/10.1016/S0001-8791(02)00030-1

Basu, A., & Kundu, A. (2022). Feminisation of the Teaching Profession and Patriarchy. *International Journal of Educational Sciences*, *36*(1-3), 8-18. https://doi.org/10.31901/24566322.2022/36.1-3.1205

Beijaard, D. (1995). Teachers' prior experiences and actual perceptions of professional identity. *Teachers and Teaching*, *1*(2), 281-294. https://doi.org/10.1080/1354060950010209

Beijaard, D., Meijer, P. C., & Verloop, N. (2004). Reconsidering research on teachers' professional identity. *Teaching and Teacher Education*, *20*(2), 107-128. https://doi.org/10.1016/j.tate.2003.07.001

Beijaard, D., Verloop, N., & Vermunt, J. D. (2000). Teachers' perceptions of professional identity: An exploratory study from a personal knowledge perspective. *Teaching and Teacher Education*, *16*(7), 749-764.

Burn, K. (2007). Professional knowledge and identity in a contested discipline: Challenges for student teachers and teacher educators. *Oxford Review of Education*, *33*(4), 445-467. https://doi.org/10.1080/03054980701450886

Busch, T., Fallan, L., & Pettersen, A. (1998). Disciplinary differences in job satisfaction, self-efficacy, goal commitment, and organizational commitment among faculty employees in Norwegian colleges: An empirical assessment of indicators of performance. *Quality in Higher Education*, *4*(2), 137-157. https://doi.org/10.1080/1353832980040204

Canrinus, E. T., Helms-Lorenz, M., Beijaard, D., Buitink, J., & Hofman, A. (2011). Profiling teachers' sense of professional identity. *Educational Studies*, *37*(5), 593-608. https://doi.org/10.1080/03055698.2010.539857

Canrinus, E. T., Helms-Lorenz, M., Beijaard, D., Buitink, J., & Hofman, A. (2012). Self-efficacy, job satisfaction, motivation and commitment: Exploring the relationships between indicators of teachers' professional identity. *European Journal of Psychology of Education*, *27*(1), 115-132. https://doi.org/10.1007/s10212-011-0069-2

Chan, A. H. S., Chen, K., & Chong, E. Y. L. (2010). *Work stress of teachers from primary and secondary schools in Hong Kong* [Conference]. The International MultiConference of Engineers and Computer Scientists (IMECS) 2010 Hong Kong.

Clandinin, D. J. (1992). Narrative and story in teacher education. In T. Russell & H. Munby (Eds.), *Teachers and teaching: From classroom to reflection* (pp. 124-137). Falmer Press.

Çoğaltay, N. (2015). Organizational commitment of teachers: A meta-analysis study for the effect of gender and marital status in Turkey. *Kuram ve Uygulamada Egitim Bilimleri*, *15*, 911-924. https://doi.org/10.12738/estp.2015.4.2755

Coldron, J., & Smith, R. (1999). Active location in teachers' construction of their professional identities. *Journal of Curriculum Studies*, *31*(6), 711-726. https://doi.org/10.1080/002202799182954

Cooper, K., & Olson, M. R. (1996). The multiple 'I's' of teacher identity. In M. Kompf, W. R. Bond, D. Dworet, & R. T. Boak (Eds.), *Changing Research and Practice: Teachers' Professionalism, Identities and Knowledge* (pp. 78-89). Palmer Press.

Cox, A., Herrick, T., & Keating, P. (2012). Accommodations: staff identity and university space. *Teaching in Higher Education*, *17*(6), 697-709. https://doi.org/10.1080/13562517.2012.658554

Day, C. (2002). School reform and transitions in teacher professionalism and identity. *International Journal of Educational Research*, *37*(8), 677-692. https://doi.org/10.1016/s0883-0355(03)00065-x

Day, C. (2011). Uncertain professional identities: Managing the emotional contexts of teaching. In C. Day & J. C.-K. Lee (Eds.), *New understandings of teacher's work: Emotions and educational change* (pp. 45-64). Springer.

Day, C., Sammons, P., Stobart, G., Kington, A., & Gu, Q. (2007). *Teachers matter: Connecting work, lives and effectiveness*. McGraw-Hill/Open University Press.

Day, C., Stobart, G., Sammons, P., Kington, A., Gu, Q., Smees, R., & Mujtaba, T. (2006). *Variations in teachers' work, lives and effectiveness*. Department for Education and Skills. https://dera.ioe.ac.uk/id/eprint/6405/1/rr743.pdf

de Jong, R., Mainhard, T., van Tartwijk, J., Veldman, I., Verloop, N., & Wubbels, T. (2013). How pre-service teachers' personality traits, self-efficacy, and discipline strategies contribute to the teacher–student relationship. *British Journal of Educational Psychology*, *84*(2), 294-310. http://dx.doi.org/10.1111/bjep.12025

Dello-Iacovo, B. (2009). Curriculum reform and 'Quality Education' in China: An overview. *International Journal of Educational Development*, *29*(3), 241-249. https://doi.org/10.1016/j.ijedudev.2008.02.008

Dworet, D. (1996). Teachers' identities: Overview. In M. Kompf, W. R. Bond, D. Dworet, & R. T. Boak (Eds.), *Changing Research and Practice: Teachers' Professionalism, Identities and Knowledge* (pp. 67-77). Palmer Press.

Evans, L. (1998). *Teacher morale, job satisfaction, and motivation*. P. Chapman Pub.

Federici, R., & Skaalvik, E. (2012). Principal self-efficacy: Relations with burnout, job satisfaction and motivation to quit. *Social Psychology of Education*, *15*(3), 295-320. https://doi.org/10.1007/s11218-012-9183-5

Friedman, I. A., & Kass, E. (2002). Teacher self-efficacy: A classroom-organization conceptualization. *Teaching and Teacher Education*, *18*(6), 675-686. https://doi.org/10.1016/s0742-051x(02)00027-6

Gökyer, N. (2018). Organizational commitment of high school teachers. *Journal of Education and Training Studies*, *6*(3a), 115-125. https://doi.org/10.11114/jets.v6i3a.3165

Graham, A., & Phelps, R. (2003). Being a teacher: Developing teacher identity and enhancing practice through metacognitive and reflective learning processes. *Australian Journal of Teacher Education*, *27*(2), 11-24. https://doi.org/10.14221/ajte.2002v27n2.2

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (Eds.). (2010). *Multivariate data analysis* (7th ed.). Prentice Hall.

Helms, J. V. (1998). Science and me: Subject matter and identity in secondary school science teachers. *Journal of Research in Science Teaching*, *35*(7), 811-834.

Hong, J. Y. (2010). Pre-service and beginning teachers' professional identity and its relation to dropping out of the profession. *Teaching and Teacher Education*, *26*(8), 1530-1543. <Go to ISI>://WOS:000282549100005

Hoppock, R. (1935). *Job satisfaction*. Harper and Brothers.

Hustler, D., McNamara, O., Jarvis, J., Londra, M., & Campbell, A. (2003). *Teachers' perceptions of continuing professional development*.

Joolideh, F., & Yeshodhara, K. (2009). Organizational commitment among high school teachers of India and Iran. *Journal of Educational Administration*, *47*(1), 127-136. https://doi.org/10.1108/09578230910928115

Kelchtermans, G. (1993). Getting the story, understanding the lives: From career stories to teachers' professional development. *Teaching and Teacher Education*, *9*(5/6), 443-456. https://doi.org/10.1016/0742-051x(93)90029-g

Kelchtermans, G. (2005). Teachers' emotions in educational reforms: Self-understanding,vulnerable commitment and micropolitical literacy. *Teaching and Teacher Education*, *21*, 995–1006.

Kim, H., & Cho, Y. (2014). Pre-service teachers' motivation, sense of teaching efficacy, and expectation of reality shock. *Asia-Pacific Journal of Teacher Education*, *42*(1), 67-81. https://doi.org/10.1080/1359866X.2013.855999

Klassen, R. M., & Chiu, M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology*, *102*(3), 741-756. https://doi.org/10.1037/a0019237

Lasky, S. (2005). A sociocultural approach to understanding teacher identity, agency and professional vulnerability in a context of secondary school reform. *Teaching and Teacher Education*, *21*(8), 899-916. https://doi.org/10.1016/j.tate.2005.06.003

Li, B. (2016). A three-wave validation of a tool measuring teacher identity. *International Journal of Research in Education Methodology*, *7*(4), 1313-1322. https://doi.org/10.24297/ijrem.v7i4.4347

Li, B., Li, Z., & Fu, M. (2022). Understanding beginning teachers' professional identity changes through job demands-resources theory. *Acta Psychologica*, *230*, Article 103760. https://doi.org/10.1016/j.actpsy.2022.103760

Li, Q., Zhu, X., & Lo, L. N. K. (2019). Teacher education and teaching in China. *Teachers and Teaching*, *25*(7), 753-756. https://doi.org/10.1080/13540602.2019.1693429

Ling, C. Y. (2006). *Occupational health problems for teachers from primary and secondary schools in Hong Kong* [Unpublished doctoral dissertation]. City University of Hong Kong.

Little, J. W. (1993). Professional community in comprehensive high schools: The two worlds of academic and vocational teachers. In J. W. Little & M. W. McLaughlin (Eds.), *Teachers' work: Individuals, colleagues, and contexts* (pp. 137-163). Teachers College Press.

Marston, S. H. (2010). Why do they teach? A comparison of elementary, high school, and college teachers. *Education*, *131*(2), 437-454.

Martinez-Leon, I., Olmedo-Cifuentes, I., Arcas-Lario, N., & Zapata-Conesa, J. (2018). Cooperatives in education: Teacher job satisfaction and gender differences. *Ciriec-Espana Revista De Economia Publica Social Y Cooperativa*, *94*(1), 31-60. https://doi.org/10.7203/ciriec-e.94.12700

Mason, S., & Alice, C. (2020). Age, gender and language teacher identity: Narratives from higher education. *Sexuality & Culture*, *24*. https://doi.org/10.1007/s12119-020-09749-x

Meijman, T. F., & Mulder, G. (1998). Psychological aspects of workload. In P. J. D. Drenth, H. Thierry, & C. J. d. Wolff (Eds.), *Handbook of work and organizational psychology* (2nd ed., Vol. 2: Work Psychology, pp. 5-33). Psychology Press.

Menter, I. (2010). *Teachers: Formation, training and identity: A literature review*. Creativity, Culture and Education.

Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review*, *1*(1), 61-89. https://doi.org/10.1016/1053-4822

Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, *78*(4), 538-551. https://doi.org/10.1037/0021-9010.78.4.538

Meyers, L. S., Gamst, G., & Guarino, A. J. (2013). *Applied multivariate research: Design and interpretation*. SAGE Publications.

Moses, I., Admiraal, W., & Berry, A. (2016). Gender and gender role differences in student–teachers' commitment to teaching. *Social Psychology of Education*, *19*(3). https://doi.org/10.1007/s11218-016-9340-3

Neumann, R. (2001). Disciplinary differences and university teaching. *Studies in Higher Education*, *26*(2), 135-146. https://doi.org/10.1007/978-94-017-8905-9_329

Nevgi, A., Postareff, L., & Lindblom-Ylänne, S. (2004). *The effect of discipline on motivational and self-efficacy beliefs and on approaches to teaching of Finnish and English university teachers* [Conference]. The SIG Higher Education conference in June 18-21, 2004, Stockholm.

Robinson, M., & McMillan, W. (2006). Who teaches the teachers? Identity, discourse and policy in teacher education. *Teaching and Teacher Education*, *22*, 327-336. https://doi.org/10.1016/j.tate.2005.11.003

Sachs, J. (2005). Teacher education and the development of professional identity: Learning to be a teacher. In P. Denicolo & M. Kompf (Eds.), *Connecting policy and practice: Challenges for teaching and learning in schools and universities* (pp. 5-21). Routledge.

Sadeghi, K., Ghaderi, F., & Abdollahpour, Z. (2021). Self-reported teaching effectiveness and job satisfaction among teachers: the role of subject matter and other demographic variables. *Heliyon*, *7*(6), Article e07193. https://doi.org/10.1016/j.heliyon.2021.e07193

Sinclair, C., Dowson, M., & McInerney, D. M. (2006). Motivations to teach: Psychometric perspectives across the first semester of teacher education. *Teachers College Record*, *108*, 1132-1154. https://doi.org/10.1111/j.1467-9620.2006.00688.x

Sloane, P. J., & Williams, H. (2000). Job satisfaction, comparison earnings, and gender. *Labor*, *14*(3), 473-502. https://doi.org/10.1111/1467-9914.00142

Song, H., Gu, Q., & Zhang, Z. (2020). An exploratory study of teachers' subjective wellbeing: Understanding the links between teachers' income satisfaction, altruism, self-efficacy and work satisfaction. *Teachers and Teaching*, *26*(1), 3-31. https://doi.org/10.1080/13540602.2020.1719059

Stenhouse, L. (1975). *An introduct ion to curriculum research and development*. Heinemann.

Strun, A., & Murray, K. (2019). Understanding the relationship between gender and self-efficacy in Northeast Texas public schools. *Journal of Human Services: Training, Research, and Practice*, *4*(1), 1-21. https://doi.org/10.1016/S0742-051X(01)00036-1

Sutton, R. I. (1984). Job stress among primary and secondary schoolteachers: Its relationship to ill-being. *Work and Occupations*, *11*(1), 7-28. https://doi.org/10.1177/0730888484011001002

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Allyn & Bacon.

Tickle, L. (2000). *Teacher induction: The way ahead*. Open University Press.

Timoštšuk, I., & Ugaste, A. (2010). Student teachers' professional identity. *Teaching and Teacher Education*, *26*(8), 1563-1570.

Tsui, A. B. M. (2007). Complexities of identity formation: A narrative inquiry of an EFL teacher. *TESOL Quarterly*, *41*(14), 657-680. https://doi.org/0.1002/j.1545-7249.2007.tb00098.x

Van Prooijen, J.-W., & Van Der Kloot, W. A. (2001). Confirmatory analysis of exploratively obtained factor structures. *Educational and Psychological Measurement*, *61*(5), 777-792. https://doi.org/10.1177/00131640121971518

Varah, L. J., Theune, W. S., & Parker, L. (1986). Beginning teachers: Sink or swim? *Journal of Teacher Education*, *37*, 30-33. https://doi.org/10.1177/002248718603700107

Voss, T., & Kunter, M. (2019). "Reality shock" of beginning teachers? Changes in teacher candidates' emotional exhaustion and constructivist-oriented beliefs. *Journal of Teacher Education*, *71*(3), 292-306. https://doi.org/10.1177/0022487119839700

Yucel, I., & Bektas, C. (2012). Job satisfaction, organizational commitment and demographic characteristics among teachers in Turkey: Younger is better? *Procedia-Social and Behavioral Sciences*, *46*(0), 1598-1608.

The Effect of Educational Digital Games Designed by Students on the Teaching of the 6th Grade Effective Citizenship Learning Area in the Social Studies Course

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Abstract

Digital games have become more involved in our lives and entertainment culture with the development of technology. Digital games, which individuals of all ages play and derive great enjoyment from at the same time, have been actively used in educational activities. However, it is seen that the games used in the education process are mostly developed and marketed by different institutions. Thus, the aim of this study is to have secondary school students design and code the games that will be used in the effective citizenship learning area so that they can become more active in their own learning experiences and become digital producers as well as digital consumers. Considering this purpose, an explanatory sequential design, one of the mixed-methods research designs, was adopted in the study. After the data were obtained by using a quasi-experimental design in the quantitative aspect of the study, student opinions were taken to explain these data in depth, and the study was supported by the qualitative data. The qualitative data were collected with the Effective Citizenship Learning Domain Academic Achievement Test (ECLDAAT), and the quantitative data were gathered with student interviews. The quantitative data of the study were analyzed using the SPSS program and appropriate analyses. Student interviews were analyzed using content analysis. As a result of the study, it was found that educational digital games coded and designed by students had significant effects on learning. In addition, the students stated at the end of the implementation that the lesson was more fun, they were more motivated, and they boosted their learning during the implementation process.

Keywords: educational digital game, coding, social studies, student

Introduction

With the rapid development of technology, everyone, young and old alike, is now in contact with it, is affected by the living conditions introduced by it, and develops technology as its user. This process of influence and being influenced takes place in every field and inevitably requires mutual adaptation to each other. This adaptation process manifests itself in the field of education as in every other field. Now that educational materials are digitalized, more people can access education through such methods as distance education, digital educational contents, etc.

The century we live in is called the digital age because technological materials have both become widespread and cheap, internet access has increased significantly, and information and communication technologies have been used more by people. Children who are introduced to digital devices and digital media tools at an early age are interested in this field. Thus, they have an important role in this field as active consumers of digital materials. In fact, when the internet usage data of children aged 6–15 years in Turkey was examined, it was observed that while the usage rate of the Internet in this age group was 50.8% in 2013, this rate was 82.7% in 2021 (Turkish Statistical Institute [TUIK], 2021). When the data of TUIK (2021) are examined, it is found that children (6–15 years old) spend most of their time on the Internet for online lessons (86.2% of the pandemic period data) and learning purposes (83.6%), such as doing homework and research. Since children who have access to digital devices and the internet from an early age and can use technology as much as their parents use the internet for educational purposes, the number of studies carried out to increase the benefits of the internet and restrain its harms has started to increase in order to make the internet use more efficient as an educational

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resource for children (Avcı & Seferoğlu, 2011; Hicks & Ewing, 2003; Hatakka & Langsten, 2011; Henkoğlu et al., 2015; Kuzhan, 2019; Nartgün, 2002; Rakes, 1996; Shayan, 2015; Şenyurt, 2015).

The number of studies has increased due to the use of technology in education, and this has led to the introduction of new concepts. In 2016, the International Society of Technology in Education (ISTE) recognized "computational thinking (STEAM)" as a new 21st century skill (Ananiadou & Claro, 2009; Setle & Perkovic, 2010). Computational thinking (CT), also called computer thinking, is described as a type of problem solving. One of the definitions of this concept is to understand problem solving, system design, and human behavior by using computer science (Wing, 2006, as cited in Erol, 2020, p. 7). In other words, while solving problems, a person should think like a computer scientist and make it a skill. This defined skill can be acquired with coding and programming education (Erol, 2020). Regarding STEAM, Weintrop et al. (2014) have defined four sub-skills: modeling and simulation skills, data and information skills, computational problem-solving skills, and system management skills (ISTE, 2016). When these skills are integrated with the education and training processes, it is considered that students' latent learning processes will be supported. Hence, considering the stages and sub-skills of computational thinking, it is seen that not only computer science but also the research carried out in the physical sciences and social sciences are influenced by the development of these skills (Bundy, 2007). Therefore, the importance of developing relevant contents in the curricula in order to allow STEAM in all courses, especially in science and mathematics courses that aim to solve problems, is now accepted by many countries in the world. The studies carried out on this issue reveal the importance of STEAM (Batı et al., 2017; Bay & Üzümcü, 2018; Gülbahar & Kalelioğlu, 2014; Sarıkaya 2019). Thus, many countries have included coding in their curricula as a new literacy skill. It is stated that the countries that have integrated coding training into their curricula have the following rationale: fostering logical thinking, fostering problem solving, fostering coding skills, fostering employability in information technologies, and attracting students into information technologies (Balanskant & Engelhardt, 2015). Considering these purposes, it can be stated that teaching coding to children at early ages improves digital literacy, expands understanding of basic programming logic, reinforces interest in programming, develops computational thinking such as analytical thinking and algorithmic thinking, promotes creativity and imagination, develops productive skills with informatics, has positive effects on self-confidence, and boosts academic achievement in science, mathematics, and other courses (Erol, 2020, pp. 4-5).

Coding is the process of transforming a solved problem into a computer language format using a programming language (Fesakis & Serafeim, 2009). Coding is also defined as the process of application, development, and production that is formed by the interaction between humans and the computer in order to perform a certain task using the command sets of the computer (Business & Dictionary, 2015). According to these definitions, coding is a sub-process used in programming; that is, it is one small part of programming. The process of coding consists of design and training (Sayın & Seferoğlu, 2016). The analysis, design, development, and testing phases used in the coding process overlap with the understanding of the problem (analysis), finding solutions (design), implementing the appropriate solution (development), and solving and evaluating the problem (testing) phases of the problem-solving skill, and they are also guiding in the case of a problem encountered in real life (Çetin, 2012; Karabak & Güneş, 2016). Children who code can create new programs rather than using existing ones (Demirer & Sak, 2016). These children, who do research, ask questions, and create new products, keep pace with technology. This process develops children's imagination and creativity and increases their ability to find solutions to problems, their self-esteem, and their motivation in lessons (Clements & Gullo, 1984; Çiftçi et al., 2017; Deniz, 2021; Jenkins, 2002; Resnick & Silverman, 2005; Şahin, 2019).

Learning takes place through experience in coding (Mishra & Girod, 2006). According to constructivist theory, children who learn through experience use all their senses during the activity and learn depending on the cause-and-effect relationship. This, in turn, teaches children how to construct knowledge and provides permanent learning (Bilgin & Toksoy, 2014; Jaworsky, 1994). Children create games, digital stories, animations, and different robots with coding training. Computer game technology develops important skills such as motivation, persistence, curiosity, attention, and attitude in children and thus promotes their learning (Becker, 2007). Considering the benefits of coding education, different projects and so on have been organized to make teachers and students more effective and competent. Agreements have been signed with companies such as Google and Microsoft for the training of teachers, and preparation programs have been set up, especially in the USA. Teachers could receive free training through 'code.org' developed for this purpose. After the teacher training, student training was started, and students were supported to comprehend many coding languages and write their own codes. Code.org was translated into 45 languages, including Turkish, and used in 180 countries. These activities were announced to a wider audience by organizing coding Olympiads (USA Computing Olympiad, 2015). In Europe, in addition to teaching coding courses in schools, the "Code Week" project, which is a grassroots initiative to introduce coding and digital literacy to everyone in a fun and interesting way, was launched in October. In 2023, Code Week will take place between October 7 and 22 (https://codeweek.eu/).

When coding training in Turkey is analyzed, it is seen that the name of the Information Technologies course was replaced with the Information Technologies and Software course with the regulations made in 2012. In terms of the development of computational thinking skills, it is seen that problem solving and programming units were included in this program in the 5th and 6th grades (Ministry of National Education (MEB), 2018a). In secondary education, the name of the course became Computer Science, and its content was expanded. The first stage of these courses, which consist of two stages, includes problem solving, algorithms, and programming units; the second stage includes robot programming, web programming, and mobile programming units (MEB, 2018b). If there is a preparatory class in Anatolian and Social Sciences High Schools, this course is given as a compulsory course for 4 hours a week but as an elective course in all other grades (MEB, 2018b).

Coding education is considered important for the development of digital competence in students. Indeed, the Ministry of National Education (MEB) published new curricula for all domains in 2018 and specified a framework of core competencies for all of these curricula. Digital competence, included among these specified competencies, is described as "using information and communication technologies safely and critically in all areas of life" (MEB, 2018b). In addition to the digital competence involved in the competencies, digital skills are included in the social studies curriculum. In addition to digital literacy and media literacy skills that aim at promoting digital competencies, problem solving, critical thinking, and innovative thinking skills, which will develop in line with the development of these two skills, are also included, and it is emphasized within the scope of the curriculum that these skills must be fostered (MEB, 2018c). However, considering the development of these skills for the digital domain, the skills included in the social studies course have deficiencies in terms of implementation. Students are taught how to use digital platforms more effectively and correctly, rather than directly creating a digital product.

Considering the internet use among the secondary school students, it was determined that a large proportion of children aged 6–15 years used the existing digital content produced for different purposes (education, entertainment, etc.) as consumers. However, digital literacy, which social studies courses aim to have students gain, involves not only using digital products correctly but also producing digital content in line with their needs (Eshet-Alkali & Amichai-Hamburger, 2004). It is important for the secondary school students to develop this skill because they should deal with technological devices as much as necessary, and they should be encouraged to produce various digital products in this process so that they can gain this skill in the most accurate way. Because digital games are actively used, especially by students in the secondary school age group, it is important that they design their own digital games. In fact, according to the data from TUIK (2021), 66.1% of children aged 6–15 years actively use the internet to play digital games. Adding an educational dimension to students' recreational activities will make the education and training processes more effective. Coding training should be included more in teaching activities to ensure that secondary school students are more active in their own learning experiences and become digital producers as well as digital consumers. If students design digital games together with coding, educational content, and game processes, they will not only show great progress in terms of coding training but also achieve learning outcomes related to the relevant course. Based on these ideas, this study aimed to determine the effects of educational digital games designed by students on the teaching of the effective citizenship learning area in a social studies course. In line with this main purpose, the sub-problems of the study were determined as follows:

1. Is there a significant difference between the pre-test and post-test scores of the experimental group?
2. Is there a significant difference between the pre-test and post-test scores of the experimental and control groups?
3. What are the students' opinions about the implementation process of an educational digital game that they developed by coding themselves?

Explanatory sequential design, one of the mixed-methods research designs, was used in the research. Mixed-methods research is a research methodology in which researchers incorporate quantitative and qualitative data and analysis methods to develop an in-depth and comprehensive understanding of the purpose of the research (Clark & Ivankova, 2016/2018). In mixed methods research, quantitative and qualitative components are connected with each other, which ensures that all aspects of the research are discussed, quantitative and qualitative data support each other, and the weaknesses and strengths of the methods are integrated into the research (Clark & Ivankova, 2016–2018).

Explanatory sequential design, one of the mixed-methods research designs, was chosen as the research design in the study. The reason for the selection of this design is that the researcher first begins with the collection and analysis of quantitative data to address the research problem and then continues with qualitative research methods to support and explain the quantitative findings (Creswell, 2017). Experimental research objectifies events and phenomena experienced, expresses them as numerical data, and thus optimizes the precision of findings (Ural & Kılıç, 2006). In the quantitative part of the study, a quasi-experimental research design with

pre-test and post-test experimental and control groups was used. With the intention of finding cause-and-effect relationships, the researcher creates experimental contexts and attempts to reveal the reason for the variation in the dependent variable within the framework of the cause-and-effect relationship (Can, 2014). This method was preferred in this study because the effect of educational digital games designed by students by coding on the teaching of the effective citizenship learning area in a social studies course was examined. A case study design was administered in the qualitative part of the study to support the data of the study. According to Creswell (2017), a case study is a qualitative research approach in which the researcher carries out an in-depth investigation of a topic of interest or phenomenon within the implementation time with multiple data collection tools and describes the phenomena and impressions related to them.

Sampling

This study, conducted in the 2021–2022 academic year, was carried out with the 6th grade students studying in two different classes in a private secondary school in Erzurum province. None of the study coordinators work at the school where the study was conducted. The reason for choosing a private school for the study was the need for a computer laboratory and the need for students to have computers at home and to have basic computer skills. One of the classes formed the experimental group, and the other one formed the control group. The experimental group designed and played a digital game related to the effective citizenship learning area and learned the unit through this implementation process. The control group students continued their education as prescribed by the current curriculum.

The purposeful sampling method was preferred for the quantitative dimension of the research. In purposive sampling, the participants are selected due to their characteristics in the study that the researcher needs in the sample; that is, they are selected on purpose (Başkale, 2016). This sampling type enables the selection of individuals or groups with knowledge and experience about the research (Yağar & Dökme 2018). While selecting samples for the research, the following points were particularly taken into consideration: Students must have a desktop PC or laptop at home; there must be a computer lab in the school; and students must have enough computer skills for coding at the beginner level. Thus, purposive sampling was preferred when selecting the school. It was decided that the private secondary school was the most appropriate sample for this approach because it was not only affiliated with the Ministry of National Education but also served the purpose of the study, and thus the implementation was carried out in this school.

Simple random sampling is a method in which each member of the population has an equal probability of being selected and included in the sample. In this method, all participants have the same probability of being chosen (Demir & Çamlı 2011). In quasi-experimental designs, all previously formed groups are randomly assigned to experimental or control groups (Campbell & Stanley, 1963). Since there were two 6th grade classes in the school where the application was carried out in this study, the groups were randomly assigned as experimental and control groups. In the sample, there were 16 students in the experimental group and 14 students in the control group.

Data Collection Tools

Two data-gathering tools were used in the study. The learning outcomes that would be measured for the research problem were taken as references for the tests and forms that were developed before the implementation stage of the study, and data collection tools were developed accordingly (Hovardaoğlu, 2007, pp. 56–57). The ECLAAAT was developed to determine the effect of the coding activities on learning in the quantitative part of the research. Regarding the qualitative aspect of the research, a semi-structured interview form was developed and administered to the experimental group of students participating in the study.

Effective Citizenship Learning Area Academic Achievement Test (ECLAAAT)

A specification table was created considering the cognitive domain levels of Bloom's taxonomy for the content validity of ECLAAAT questions. According to this table, a detailed rubric was prepared for the ECLAAAT questions developed by the researcher. While preparing the ECLAAAT questions, more questions were included in the test, especially for the long-term and comprehensive learning outcomes (İlter, 2013). In order to ensure the content validity of the academic achievement test, a multiple-choice test specification table was prepared to cover the cognitive level steps. The test prepared as a draft for the 6th grade effective citizenship learning area consisted of 50 questions. Within the scope of validity and reliability studies, validity and reliability calculations of the test were carried out by administering it to 80 7th grade students. As a result of the analysis, the questions with low validity and reliability were modified or excluded from the test. As a result of

the implementation, a total of 13 questions with low reliability and content validity were excluded from the test, and the ECLAAAT consisted of 37 questions.

Semi-structured interview form

A semi-structured interview form was used in the study to support the quantitative data, increase the credibility (internal validity) of the research, and evaluate the coding training and digital game in terms of students' opinions. The data were obtained through interviews carried out with the experimental group students to determine their opinions about the process. While preparing the interview, first the problem was determined and the relevant literature was analyzed. The draft of the interview form was submitted for expert opinion, and the interview was finalized by making the necessary changes in line with the feedback received from two field experts. In line with the expert opinions, 3 questions were removed from the first version of the form and replaced with 8 questions. However, for these eight questions, it was stated that probe questions should be added in case the students did not fully understand the question. While administering the interview to the students, they were informed about the form; they were told not to write their names on the forms, and the drawbacks that may arise due to the name of the participant that is written on the form while answering the questions were tried to be minimized. Sufficient time was allocated for the data collection process. The forms were filled out by the experimental group students in the last lesson hour of the implementation process in the presence of the social studies teacher and the researcher.

Reliability and Validity of Data Collection Tools

Validity and reliability are two important criteria for scientific research. Validity refers to how accurately the study measures what it intends to measure without involving another characteristic (Balcı, 2010). External validity is about the generalisability of the results, and internal validity (credibility) is the extent to which the obtained results represent the truth in the population. Extra attention was paid to ensuring internal validity because the findings obtained from the data must be broad enough to cover the relevant research and narrow enough to exclude concepts that were not included in the study. In terms of external validity (transferability), the purpose of an in-depth description of the implementation process of the research is to convey the research process to the reader in a simple and understandable way. This study should be understood in the same or similar ways by the reader. For this purpose, the research process was carefully planned and implemented, as described in detail in the method (implementation) section of the study. In addition, the study group was determined in accordance with the purpose of the research.

In order to ensure the reliability of the research, firstly, internal reliability (consistency) was ensured. Validity and reliability studies of data collection tools, the calculation of internal consistency coefficients, and expert evaluations are the practices carried out for this purpose. The data analyses and all documents related to the study were kept by the researcher for external reliability (confirmability).

According to the ECLAAAT specification table prepared in accordance with Bloom's taxonomy, 8 questions are in the knowledge level, 21 questions are in the comprehension level, 1 question is in the application level, 5 questions are in the analysis level, and 2 questions are in the synthesis level. Subject matter experts' opinions about the test were also taken into account, and corrections were made accordingly. When the questions are evaluated in terms of content validity, it is seen that 7 questions are about national sovereignty, democracy, or republic; 5 questions are about forms of government; 4 questions are about three important powers of the state and separation of powers; 4 questions are about jurisdiction; 3 questions are about the Grand National Assembly of Turkey (TBMM); 2 questions are about the presidential system; 2 questions are about human rights; 2 questions are about women in history and women's rights; and 1 question is about other subjects. In this respect, it can be stated that the questions cover every subject in the learning area in terms of content validity.

Cronbach's Alpha Analysis: Cronbach's alpha is used to explain or question the homogenous structure of the items in the scale in cases where the items are mainly scored. The data obtained from this analysis helps determine whether the items consistently measure the same characteristic. Cronbach's alpha was used to measure the internal reliability (consistency) of the test in the study. Since the Cronbach's alpha coefficient was found to be .93 in the analyses, it can be stated that the items in the test are consistent with each other, the test consists of items that measure the same characteristic, and it has a homogeneous structure.

A student interview form was developed to obtain qualitative data for the research. The data obtained from the form was organized by two experts, and categories were determined. In cases where there was a difference of opinion between the experts, they discussed the category or categories and reached a consensus on the

categories. Finally, the categorization process was completed. While reporting the data, the student opinions were directly cited. (For the process of creating an interview form, see the title Semi-structured *Interview Form).*

Data Analysis

This study was carried out in four weeks with the two 6th grade classes (CG14+EG16=F30) in a private school. The ECLAAAT was administered to the experimental and control groups as a pre- and post-test to determine the effects of the digital games developed by coding on the Scratch platform on students' academic achievement. The data of the experimental and control groups were analyzed with the SPSS 22.00 statistical package program and then evaluated. Before analyzing the obtained data, it was checked whether the data had a normal distribution or not, and then it was decided what type of parametric or nonparametric statistical techniques would be used according to the result obtained. The results of the normality test revealed that the data was normally distributed, but since the number of samples in the groups was small, non-parametric tests were used for the analysis of the data (Can, 2014). The following tests were adopted for the analysis of quantitative data:

Mann-Whitney U Test: The Mann-Whitney U test is a non-parametric test that is used to compare two sample means that come from the two samples, or groups. In addition, it is used under the following conditions: The sample size is small to compare the averages in two groups; even if the data in your sample size is sufficient, the data is not normally distributed, so the conditions of the test are not met, or the data are on an ordinal scale, that is, they can be ranked (Can, 2014, p. 126). It is a method by which we can analyze whether the data are significant or not according to the research questions. The reason for choosing the Mann-Whitney U test in this study is that although the data are normally distributed, the number of samples in the groups is small.

Wilcoxon Signed Rank Test: The Wilcoxon signed rank test is a non-parametric test used to compare two sets of scores or averages that come from the same participants under the following conditions: the sample size is small, even if the data in your sample size is sufficient, the data is not normally distributed, so the conditions of the test are not met, or the data are on an ordinal scale, that is, they can be ranked (Can, 2014, p. 142). The Wilcoxon Signed Ranks Test is chosen in this study due to the small sample size.

Analysis of Qualitative Data

The data obtained from the interviews was analyzed using content analysis. The experimental group's students' opinions were collected in writing. The data obtained from students' opinions was analyzed, and then categories were formed. The obtained data were read carefully, and the categories developed were examined by the two experts. Then, similar opinions were grouped into suitable categories by reaching a consensus in line with expert opinions.

Implementation Process

In this study, digital games coded and designed by the students were used for students to teach the learning outcomes within the content of the effective citizenship learning area in the 6th grade Social Studies course. Throughout a four-week coding training, after a social studies teacher informed the students in the first week of the implementation, the students were asked to do research about the story of the games, animations, and questions in the study. In the following weeks, the students selected the questions and stories that would be used in the games developed, and they wrote scenarios for the stories; thus, a total of 10 questions and 4 scenarios were created. After the students designed and coded the digital game developed by coding, they learned the subject by playing the game. During the implementation process, while scenarios and questions were written and the game was designed in the social studies course, the process of coding the game was carried out in the information technologies course. At the end of the study, the reasons for the students success in this implementation process were evaluated in line with the students opinions.

Findings

The findings obtained by analyzing the data with the data-gathering tools developed for the research questions were presented in this section of the research.

Finding Related to the Experimental Research

The experimental dimension of the research aims to determine the effect of educational digital games designed and played by students by coding on the teaching of the effective citizenship learning area. The Wilcoxon signed rank test was administered to compare the ECLAAAT pre-test and post-test scores of the experimental group students before and after the implementation of the educational digital games designed by coding, and the findings are presented in Table 1.

Table 1. A Comparison of Experimental Group's Pre-test and Post-test Scores of ECLAAAT

		N	$\overline{X}$	SS.	Mean rank	Mean total	Z	P
ECLDAAT	Pre-test	16	12.81	4.04	.00	.00	-3.526	.000
	Posttest	16	34.13	2.55	8.50	136.00		

When the pre-test and post-test results (x̄=12.81, SD=4.04) were compared with the ECLAAAT results (x̄=34.13, SD=2.55) after the implementation of the educational digital games designed by coding, it is seen in Table 2 that there was a significant difference between the pre-test and post-test scores of the students in the experimental group in favor of the post-test at a significance level of $p<0.05$. According to the findings obtained, it was observed that the experimental group students' ECLAAAT scores increased after the students in the experimental group carried out an activity in which they designed the game by coding and played it for four weeks. Considering these findings, it was determined that they learned the "effective citizenship *learning area*" with this implementation.

The Wilcoxon signed-rank test was administered to compare the control group students' ECLAAAT pre-test and post-test scores before and after teaching the content appropriate to the current curriculum with the traditional method, and the findings are presented in Table 2.

Table 2. A Comparison of Control Group's Pre-test and Post-test Scores of ECLDAAT

		N	$\overline{X}$	SS.	Mean rank	Mean total	Z	P
ECLAAAT	Pre-test	14	14.50	5.08	.00	.00	-3.298	.001
	Post-test	14	31.50	2.14	7.50	105.00		

It is seen in Table 2 that there was a significant difference between the ECLAAAT results (x̄=14.50, SS=5.08) of the students in the control group before the implementation and their ECLAAAT results (x̄=31.50, SS=2.14) after the implementation in favour of the post-test at a significance level of $p<0.05$.

The Mann Whitney U test was performed to compare the ECLAAAT pre-test scores of the students in the experimental and control groups before the implementation and the findings were presented in Table 3.

Table 3. *A Comparison of Experimental and Control Groups 'Pre-test Scores of ECLDAAT*

		N	$\overline{X}$	S.s.	Mean rank	Mean total	U	P
ECLAAAT	Experimental	16	12.81	4.04	14.56	233.00	97.000	.552
	Control	14	14.50	5.08	16.57	232.00		

It is seen in Table 3 that there is no significant difference between the ECLAAAT results of the students in the experimental group (x̄=12.81, SD=4.04) and the ECLAAAT results of the students in the control group (x̄=14.50, SD=5.08) before the application at a significance level of $p>0.05$. According to the findings obtained, it was concluded that there was no difference between the ECLAAAT pre-test scores of the students in the experimental and control groups before the implementation. Considering the result of this analysis, the data obtained reveals that both groups were equivalent to each other before the research.

The Mann-Whitney U test was performed in order to compare the ECLAAAT post-test scores of the students in the experimental group where the educational digital games designed by coding were applied and the control

group students who were taught the content appropriate to the current curriculum by the teacher in a traditional way, and the findings are presented in Table 4.

Table 4. *A Comparison of Experimental and Control Groups' Post-test Scores of ECLAAT*

		n	$\overline{X}$	SS.	Mean rank	Rank total	U	p
ECLAAAT	Experimental	16	34.13	2.55	20.59	329.50	30,500	,000
	Control	14	31.50	2.14	9.68	135.50		

When the ECLAAAT results of the students in the experimental group (x̄=34.13, SD=2.55) and the ECLAAAT results of the students in the control group (x̄=31.50, SD=2.14) are compared in Table 4, it is seen that there is a significant difference between the post-test scores of the two groups at a significance level of p<0.05. According to the findings obtained, it is seen that there is a significant difference in favour of the experimental group considering the ECLAAAT post-test scores of experimental and control group students after the implementation. According to the findings obtained as a result of the comparison of the ECLAAAT post-test scores, it was concluded that the experimental group was more successful than the control group.

Findings Related to the Case Study

The student opinions obtained through the semi-structured interview form in the qualitative part of the study were subjected to content analysis, and the data were grouped under the appropriate category headings in this section of the study.

Table 5. Students' Knowledge of Coding Before the Implementation

Opinions	F
Getting information from media and digital platforms	10
Lack of information	4
Informing the teacher during the application	2

According to the analysis of the interviews carried out with the students, when the students'
"knowledge of getting information about coding and digital games" in Table 5 was analyzed, the students stated that they had information about coding from media and digital platforms (f=10), they did not have information about coding before the implementation (f=4), and they acquired knowledge only with the preliminary information lesson given by the teacher to increase their level of readiness (f=2).

In line with these categories, S9 stated that he had information about coding through media and digital platforms with the following statement: *"I had information about coding from television and media".* S5 stated that he had no knowledge about coding as follows: *"I had no information".* S16 stated that he had knowledge about coding during the implementation with the following statement: *"I had no knowledge about coding other than our teacher's information".*

Table 6. Students' Favourite Parts of the Coding Activity

Opinions	F
Implementation stage	7
Creating an animation (character)	7
Creating a maze game	6
Creating a background (stage design)	4

When the results of the analysis in Table 6 regarding the students' liking of coding were analyzed, it was determined that most students liked coding (f=14), but some students had difficulty with coding (f=1). Some students stated that they liked the application phase (f=7), and some students stated that they liked the animation (character) (f=7), maze game (f=6), background (stage) design (f=6) and coding. Some students stated that they liked the implementation process (f=7); some of them remarked that they liked coding an animation (character) (f=7), maze game (f=6), and a background (stage design) (f=6). While S6 said that the implementation process was enjoyable and fun with the following statement: "*I liked coding throughout the whole gaming process; it was great fun*", S8 and S3 wrote that because they did not know coding, they were bored in this stage, but they started to enjoy coding while they were learning it, and thus, they liked the coding process. S10 explained why he liked animating with the following statement: "I *liked animating with characters because it was great fun."* S11 explained why he liked designing the maze game with the following statement: *"While coding the maze game and creating the characters, I liked them because they were enjoyable."* S14 stated that she liked coding

the background with the following statement: "*I liked designing the background for the game and an animation.*"

Table 7. Situations that Increase Students' Interest in the Course During the Implementation Process

Opinions	F
Making the implementation phase enjoyable (fun)	10
Participating actively in the lesson	5
Increasing curiosity due to coding	5
Enhancing knowledge	1

Considering the results of the analysis in Table 7 regarding the students' interest in the learning area during the implementation phase, it can be stated that all students answered yes (f=16) and they stated that their interest in the course increased during the implementation process. Most students stated that they found the implementation process of the digital game enjoyable (f=10), their interest in the unit increased as they actively participated in the lesson (f=5), the coding activity fostered their curiosity about the unit (f=5), and the more their knowledge improved, the more their interest grew (f=1). S10 explained that their interest in the course grew during the implementation process with the following statement: "*Yes, because I actively participated in the lesson and the unit was fun. I was so curious about the unit.*" S16 stated that due to the active participation in the lesson, their interest in the unit increased and explained it with the following statement: "*I was always present in the lesson. That's why I was interested in the course.*" S4 explained why the coding activity fostered their curiosity in the unit with the following statement: "*While coding, I was more curious about the unit, and thus I had growing interest.*"

Table 8. Situations that Help Students to Learn the Unit Easily During the Coding Process

Opinions	F
Learning in the coding process	13
Doing research in the process of developing questions	7
Doing research in the process of creating a story	5
Growing curiosity about the unit	1

Regarding the results of the analysis in Table 8, while coding the digital game, the students learned the unit more easily due to some situations. Most of the students stated that the coding process contributed to their learning (f=13), some of them stated that the question preparation activities (f=7) and the process of story creation process (f=5) during the coding process facilitated learning the unit. In addition, one student stated that because his curiosity about the unit increased (f=1), he learned the unit much more easily. S10 explained the contribution of the coding process to their learning with the following statement: "*I really enjoyed the section on writing codes.*" S6 explained the contributions of activities about developing questions and the process of story creation during the coding process to their learning with the following statement: "*Because I scanned the unit to find a plot for the story and questions while developing the game, I learned a lot.*" S2 explained his growing interest in the unit with the following statement: "*As I coded, I had a growing curiosity, and this helped me learn the unit much more easily.*" S5 said, "*Because I scanned the unit, I had preliminary knowledge, which in turn helped me to learn the unit easily.*" With this statement, S5 stated that doing research during the implementation process promoted his knowledge about the unit, so his learning increased.

Apart from these opinions, some students stated that coding facilitated learning the unit, but they were bored and had difficulty coding at the beginning (f=2), and one student answered no and stated that it did not facilitate learning (f=1). S14 expressed his opinion as follows: "*I got bored while coding. I was much more interested in coding than the unit.*" S13 stated why he was bored while coding at the beginning with the following statement: "*While coding, I had really difficulty with it; learning coding took my time. But then I even did not understand how I learned the unit as time went by.*"

Table 9. Students' Learning Situations While Playing the Digital Game They Coded

Opinions	F
Finding the game-playing stage enjoyable (fun)	10
Realizing mistakes in the playing process	6
Game-playing process being educational	3
Providing an opportunity for revision	2
Increasing curiosity about the unit during the process of game-playing	1

Drawing interest	1

Considering the results in Table 9 regarding the students' learning while playing the digital game that they coded themselves, all the students (f=16) answered yes and stated that they learned the unit more easily while playing the digital game. Most of the students stated that because the stage of game-playing was enjoyable (fun) (f=10) and the mistakes were realized during the game-playing process (f=6), learning could be facilitated. In addition, because the game-playing process is instructive (f=3), the game or animation keeps repeating (f=2) and it is interesting (f=1) it facilitates learning. S1 explained why the game-playing stage was enjoyable (fun) with the following statement: *"I didn't get bored because it was fun. I lost track of time during the lesson."* S16 stated the statement *"because I realized my mistakes while playing a game and this made my work easier"* as a reason for learning easily. S3 opined that the game-playing process was instructive with the following statement: *"I learned easily while playing games. Even my mom was surprised."* S5 explained why the repeatable game or animation facilitated learning with the following statement: *"Because the game was fun, I played the game over and over again, and this engraved information in my mind."* S8 stated that the game was interesting with the following statement: *"I think playing the game drew my interest, and thus I learned the unit more easily."*

Table 10. Concepts that the Digital Game Designed by Coding Helps Learning

Opinions	F
Public opinion-pluralism	8
Legislation-execution	5
Oligarchy-monarchy	3

If we look at the results of the analysis in Table 10 regarding the students' recognizing concepts, we can see that all students answered yes to "Recognizing Concepts" and stated that they differentiated some concepts (Public Opinion-Pluralism (f=8), Legislation-Execution (f=5), Oligarchy-Monarchy (f=3) during the implementation process.

Table 11. Situations in which Students Actively Participated in the Lesson During The Implementation Process

Opinions	F
Doing research in the process of developing the game	10
Game-playing process	6
Throughout the entire implementation process	8
Writing a story in the process of developing an animation	5
Having an opportunity for revision	4
Promoting participation with the information obtained from the game	2

When the results of the analysis in Table 11 regarding the students' active participation in the lesson during the implementation process are analyzed, it is seen that all students (f=16) wrote yes to the active participation in the lesson. They stated that they did research in the process of developing the game (f=10), they prepared questions (f=6), they were active in the process of game-playing (f=8), they were active in the whole implementation process (f=5), they wrote a story (f=4), they were active by playing the game over and over again (f=2), their participation in the lesson increased with the information obtained from the game (f=2). S5 expressed his opinion as follows: *"Yes, thanks to the information I got from the game, my participation in the lesson increased."* S6 explained that they did research during the process of developing the game with the following statement: *"While designing the game, I did some research, prepared questions, coded, and played."* S16 determined that they were active throughout the implementation process as follows: *"Yes, I was always present."* S1 reported that they wrote a story with the following statement: *"I participated, did research while developing the game, and wrote a story for the animation with my peers.".* S8 stated that they were active by playing the game over and over again as follows: *"Playing the game over and over again promoted my knowledge; when I gained knowledge, I participated more and more in the lesson."*

Table 12. Students' Willingness to Use the Digital Game They Developed While Revising the Learning Domain

Opinions	F
Yes	6
No	10

Considering the results of the analysis in Table 13 regarding the students' willingness to use the digital game they prepared while revising the unit, some of the students answered yes (f=6) but the majority answered no

(f=10) and wrote that it was insufficient for general revision. The reasons for this opinion were explained in Table 13.

Table 13. Effects of Coded Game and Animation in Revision

Opinions	F
Being appropriate for the revision of some learning outcome in the learning field	10
Being appropriate for revision in the entire learning field	6

Considering the analysis results of the interviews carried out with the students in Table 13, the students stated that the designed games were suitable for the revision of some learning outcomes in the learning domain (f=10). Fewer students stated that the games designed for the whole learning domain could be used for revision (f=6). Fewer students stated that the games designed for the whole learning domain could be used for repetition (f=6). S11, who stated that the games designed were suitable for general revision, explained his opinion as follows: *"When I play the game again, I think that I will remember."* S4 stated that some learning outcomes in the learning domain were suitable for revision and explained it as follows: *"The game is merely insufficient for all subjects; it is necessary to use the book for the missing subject."* In other words, the students stated that the game they designed would be insufficient for learning the relevant topic completely and added that learning should be supported with additional resources besides the game.

Discussion and Results

Educational digital games were designed and coded by the 6th grade secondary school students in the research, and thus the study examined the effects of these digital games on students' learning of the effective citizenship learning domain. After the quantitative data were analyzed, the students' opinions were taken into account about the implementation process for an in-depth explanation of the data. In other words, the study was supported by qualitative data.

Considering the analyses regarding the effect of digital games on the academic achievement of 6th grade students in the effective citizenship learning domain in the social studies course, a significant difference was found between the pre-test and post-test results of the experimental group. In addition to this result, when the post-test results of the experimental group, in which the digital games designed by the students by coding were used, and the control group, in which the teacher taught the students traditionally with content appropriate to the current program, were compared, it was revealed that there was a significant difference in favor of the experimental group. In fact, it was concluded that educational digital games designed by the students using coding were effective in teaching the effective citizenship learning domain.

At the end of the literature review, it was found that there was no study carried out about the effect of digital games designed by students using coding on the teaching of social studies courses. Indeed, when the meeting minutes of the National Council for the Social Studies (NCSS) held between 1995 and 2002 are examined, it is stated that only 4% of the academic studies carried out on the use of the Internet in the social studies course The literature has been analyzed since 2002, and it has been observed that although there are studies on digital games, the number of studies carried out by students about the coding of digital games is quite limited. It is noteworthy that existing games are still used in the studies (Aktemur, 2022; Bakar, Tüzün, & Çağıltay, 2008; Bayram & Çalışkan, 2019; Çakmak & Taşkıran, 2014; Doğan, 2017; Erkan, 2019; Hücüptan, 2006; İşçi, 2018; Korucu, 2019; Watson, 2010; Yeşiltaş & Turan, 2015).

Doğan and Koç (2017), who predicted academic achievement by using digital games in social studies courses, examined the effect of teaching earthquake subjects with digital games on academic achievement. Although the use of a ready-made game platform in the study differs from the coding of the digital game in this study, the quantitative data of the study and the data of this study support each other. As a result of the study, there was a significant difference in favor of the experimental group in which the digital game was applied, as in this study. In the social studies course, the effect of computer-assisted education on academic achievement was examined in some studies, and it was observed that there was an increase in academic achievement in favor of the experimental group (Erkan, 2019; Çakmak & Taşkıran, 2014; Hücübtan, 2006; Yeşiltaş & Turan, 2015). The quantitative data obtained in these studies support each other since this research is also a computer-assisted activity.

Aktemur (2022) examined the effect of context-based learning strategies with the Cities Skylines game on the teaching of 6th grade social studies subjects in a social studies course. As a result of the research, in addition to academic achievement, entrepreneurship, innovation, and research skills differed significantly when compared

to the control group students. Adanalı (2018) carried out implementations with educational games in geography teaching, and he concluded that students' academic achievement increased and knowledge retention was ensured. Moreover, it was also found in the same study that students with poor academic achievement improved their self-esteem, and their motivation levels towards the course increased in this process.

As a result of the research conducted on computer-assisted instruction in science and technology courses, it was revealed that there was a significant difference in favor of the experimental group in which computer-assisted instruction was applied (Akbaba & Mor, 2017; Akçay et al., 2005). In some of these studies, the effect of computer-assisted instruction on the academic achievement of computer and instructional technologies courses was examined, and it was observed that there was an increase in academic achievement in favor of the experimental group (Hiltz & Turoff, 2002; Kulik & Kulik, 1991; Morrison et al., 1995). It was concluded in some studies that computer-assisted instruction had a significant effect on academic achievement in mathematics courses (Ermac & Suson, 2020; Kehagias & Vlachos, 1999). In these studies, it was concluded that computer-assisted instruction increased students' academic achievement, as in this study. The discussion carried out reveals that digital games are effective not only in social studies but also in other disciplines such as science and mathematics. In addition, it is found that not only digital games but also computer-assisted instruction in general are effective for learning. Since today's secondary age group students are defined as digital natives, these results support the idea that digital activities can be used effectively in teaching these students.

In addition to the studies that reveal the effectiveness of educational digital games in teaching, there were studies that were not compatible with the results of this study. In a study carried out by Koka (2018), the effect of using computer games on academic achievement in a social studies course was explored; however, a significant difference was not found at the end of the implementation. There are other studies in which the implementation of educational digital games was carried out in different fields apart from social studies, but they were not effective. In a study carried out in a computer and technology course, Bayırtepe and Tüzün (2007) examined the effects of game-based learning on students' academic achievement. There was a difference between the pre-test and post-test results of the two groups forming the experimental and control groups, but there was not a statistically significant difference between the two groups. The results of the studies carried out about the effectiveness of digital games are not compatible with each other; thus, more studies are needed to determine the reasons for these results.

In the study, it was found that educational digital games designed and coded by students after the experimental research were effective for learning. In order to determine the reasons for this result, the study was supported with qualitative data, and the experimental group students' opinions on the subject were taken into account. There were many studies in the literature regarding the data obtained from the qualitative dimension of the study, but it was found in these studies that digital games were not coded and designed by students and that existing digital games and such content were used.

The experimental group students stated that they designed the digital game for the first time at the beginning of the implementation, so they sometimes had difficulty or got bored, but other than that, they did not encounter any negative situations during the application process. Most students stated that they had information about coding and digital game design through media and digital media; some students stated that they did not have any information or that they got information from their teachers. Since there was no study encountered in the literature review that investigated the effect of the educational digital games designed and coded by students on learning and explored student opinions, this issue was not supported and discussed in the literature.

The students who expressed their opinions about the implementation process stated that they actively participated in the lesson, the lesson was enjoyable, their curiosity and interest in the unit increased, and the implementation process facilitated learning. Bayram and Çalışkan (2019), Bakir (2015), and Aktemur (2022) reached similar results to these opinions. In fact, it was observed that the students who actively participated in the lesson developed positive opinions and increased their motivation at the end of the study. Similarly, Tonbuloğlu and Tonbuloğlu (2019) found that students generally displayed a high level of motivation and participation in unplugged coding activities, had difficulty concretizing certain concepts, found the activities interesting, and liked them because they made real-life connections. The qualitative data of the other studies and the qualitative data of this study support each other regarding the data obtained from the students' statements, such as "they actively participated in the lesson, the lesson was enjoyable, their curiosity and interest in the unit increased, and learning became easier". Çakmak and Taşkıran (2014) and Erkan (2019) investigated the effect of educational digital games on attitudes towards the course, and they concluded that the use of digital games positively affected attitudes towards the course. There are also other studies that have reached similar results (Deniz, 2021; Kulik & Kulik, 1991; Okal et al., 2020). Although student attitudes are not directly explored in

this study, there are student opinions that support the research in the qualitative data obtained. Bakar et al. (2008) concluded in their study that students liked the educational game environment and that using such an environment in a social studies course as a supportive element increased their motivation in the course. The results of this study by Bakar et al. (2008) and the current study support each other. Watson (2010) concluded that digital games programmed for the social studies course on the Internet met social standards and were appropriate for use in social studies education, and thus he emphasized that the digital games must be used in the social studies course. The teacher's opinions were shaped in this direction after the experiment, and they stated that using digital games in the social studies course would have positive effects on the lesson.

The findings of the study reveal that students learned the effective citizenship learning domain easily while coding and playing the digital game. Especially, it was stated that the game design eliminated misconceptions and clarified the meaning of confused concepts such as Public Opinion-Pluralism, Oligarchy-Monarchy, Legislation-Execution. In the Project Tomorrow (2008) report, when students in grades 6 through 12 were asked about the impact of game technologies on learning, they responded that games facilitated understanding difficult concepts, games made me more interested in the subject, I would learn more about the subject, and it would be more interesting to apply problems. These data demonstrate that students strongly believe that educational digital games will contribute not only to concept learning but also to motivation, academic achievement, and problem-solving skills.

As a result of the study, although the students also stated that the designed digital game was suitable for the revision of some learning outcomes in the learning area, most students stated that the game designed for revision in the whole learning area was insufficient, but they wanted to play the game again to remember the unit. In addition, they stated that, in addition to the game, other sources would be useful for the revision of the unit. However, because there were no studies that obtained data similar to this student's opinion in the literature review, this result was not discussed.

As a result, it can be concluded that digital games prepared accurately and suitably for the purpose will be effective in social studies education. The contribution of games to the development of higher-order thinking skills is considered a benefit that cannot be ignored in terms of social studies education. As understood from the results of the research, not only students but also teachers and pre-service teachers think that digital games will provide different types of learning (knowledge, thinking skills, values, etc.) both in the social studies course and in other fields. This situation reveals that students, teachers, and pre-service teachers have considerably positive perceptions towards the use of educational digital games in education. Of course, this perspective reveals that if teachers and students include the right educational games in their learning activities, teaching activities will become more fun and effective (Mindivanli-Akdoğan & Öner, 2021).

Recommendations

Prensky (2003) states that students' interest in the subject will increase with the pleasure and richness of experience gained during the game. According to Prensky (2003), generally, video games are designed to balance the subject matter with the game play, and the player's ability to retain and apply the subject matter in question is not the enemy but the best opportunity we have to engage our children in the real learning process. Williamson (2007) states that when it is considered that students have more knowledge about digital games than teachers, the importance of this training becomes more evident. In line with these views, it is thought that properly designed digital games in every appropriate subject area are an opportunity for education, and it is argued that the design of digital games in the field of education should be supported.

As a result of the discussion carried out on the quantitative data of the research, although there were results of the study that revealed the effect of using educational digital games on academic achievement in social studies and other courses, there were also data obtained showing that educational digital games did not significantly affect teaching. This situation may be related to the subject matter studied, the practitioner, the implementation process, the game used, etc., or it may be due to different reasons that have not been identified yet. Thus, it is seen that more studies are needed to be carried out about the use of educational digital games for teaching purposes in different courses and subjects, and it is suggested that the number of quantitative and qualitative studies in this field should be increased.

Jenkins (2002), in his research (Motivation of Programming Groups), in which he analyzed the studies previously conducted as a master's thesis, aimed at providing information about the advantages and disadvantages of coding by reviewing the articles on coding. The results obtained in the studies conducted till

now were evaluated in the articles reviewed, and it was stated that "too many students find coding and programming difficult, and therefore the learning environment should be designed quickly and ideally, and the problems encountered by the students should be solved in order to understand some difficulties and complications. It has been 21 years since this study was carried out, and since then, simple coding interfaces have been created. However, because the students did not have detailed knowledge and experience about coding before the implementation, the process became partially difficult at the end of the study. Hence, as a requirement of the age we live in, it is considered that academic studies that will enable students to design their own learning materials, even at a simple level, should be emphasized by providing basic coding education to students. Cevahir and Demir (2020) investigated the effect of coding on algorithmic thinking in the mathematics course, and the results of the achievement test were found to be low. According to these findings, it was argued that we were not good at teaching programming and algorithms. This result was justified with the following opinion: *"When the literature on coding is evaluated, it is found that coding training and STEAM skills are still not included in the curriculum in our country".* It was observed in this study that secondary school students were able to code at a basic level as a result of six lesson hours of information. Providing coding training in the Computer and Instructional Technologies course in all schools and supporting this practice with other disciplines indicates that students can improve in coding.

In this study, the social studies teacher and the computer and instructional technology teacher carried out a joint study to support each other's learning areas, and this cooperation significantly increased the level of learning. Thus, it is considered very important that academic studies in which teachers can carry out research in cooperation with each other on subjects that may be related to each other be designed.

Author (s) Contribution Rate
The first author contributed 60% and the second author contributed 40% to the study.

Conflicts of Interest
No potential conflict of interest was reported by the authors.

Ethical Approval
With the decision of Atatürk University Social and Human Sciences Ethics Committee dated 06.09.2022 and numbered 18, it was stated that the study was appropriate in terms of ethical principles.

References

Adanalı, R. (2018). The effect of problem-based learning supported by geocaching game on teaching the subject of natural disasters. (Doktora thesis). Atatürk University Institute of Educational Sciences – Erzurum Council of Higher Education National Thesis Centre. (524524).

Akbaba, U., & Mor, S. (2017). 7th grade Science and Technology course "light" unit, examining the effect of computer assisted instruction method on student achievement and determining student opinions about the method. *Kafkas University Journal of Institute of Social Sciences*, 21, 135-160.

Akçay, S., Aydoğdu, M., Şensoy, Ö., & Yıldırım, H.İ. (2005). The effect of computer assisted instruction on student achievement in teaching flowering plants in 6th grades in science education. *Kastamonu Education Journal,*13(1)*,* 103-116.

Aktemur, A. (2022). The effect of digital games on learning within the framework of context-based learning strategy. (Unpublished master's thesis). Binali Yıldırım University.

Ananiadou, K., & Claro M. (2009). 21 st century skills and competences for new millennium learners in oecd countries. (OECD Education Working Papers). *33*(41).

Avcı, Ü., & Seferoğlu, S.S. (2011). Teacher burnout in the information society: technology use and measures to prevent burnout. *Mediterranean Journal of Educational Research*, (9),13-26.

Bakar, A., Tüzün, H., & Çağıltay, K. (2008). Students' opinions of educational computer game uilization: a social studies course case. *Hacettepe University Journal of Education*, (35). 27-37.

Bakır, T. (2015). Evaluation of the use of educational computer games in geography courses according to student opinions (Master's Thesis) Gazi University Institute of Educational Sciences - Ankara. Council of Higher Education National Thesis Centre. (381472).

Balanskat, A., & Engelhardt, K. (2015, October). Calculating our future: Computer programming and placement - Europe's core principles, school curricula and subjects. (International survey study).

Balcı, A. (2010). *Sosyal bilimlerde araştırma: Yöntemler, teknikler, ilkeler. (8th edition).* Pegem Akademi.

Başkale, H. (2016). Determination of validity, reliability and sample size in qualitative research. *Dokuz Eylül University Faculty of Nursing Electronic Journal,9*(1), 23-2.

Batı, K., Çalışkan, İ., & Yetişir, M. İ. (2017 Computational thinking and integrated fields approach (STEAM) in science education. *Pamukkale University Journal of Faculty of Education 41*(I), 91-103.

Bay, E., & Üzümcü, Ö. (2018). New 21st century skill in education: computational thinking. *International Journal of Social Sciences in Turkish Cultural Geography.* 3(2), 1-16

Bayırtepe, E., Tüzün, H. (2007). The effects of game-based learning environments on students' achievement and self-efficacy perceptions in computer courses. *Hacettepe University Journal of Faculty of Education,33*(33), 41-54.

Bayram, Y. T., & Çalışkan, H. (2019). Gamified creative activities used in social studies course: an action research. *Journal of Individual Differences in Education,* 1(1), 30-49.

Becker, K. (2007). Digital game-based learning onceremoved: teaching teachers. *British Journal of Educational Technology*, *3*(38), 478–488.

Bilgin, İ., & Toksoy, A. (2014). The effect of learning by doing and experiencing activities on students' science process skills. *Sakarya University Journal of Faculty of Education,* 13, 163-16.

Bundy, A. (2007). Computational thinking is pervasive. *Journal of Scientific and Practical Computing,* 1(2), 67–69.

Business Dictionary, (2015, April). What is coding. http://www.businessdictionary.com/definition/coding.html.

Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research 04*(Q175), Houghton Mifflin.

Can, A. (2014). *SPPS ile bilimsel araştırma sürecinde nicel veri analizi (3. baskı).* Pegem Academy.

Clark V.L. P., & Ivankova N.V. (2018). *Mixed methods research - a guide to the field, (Ö. Ç. Bökeoğlu Çev. Ed.)* Nobel. (Originally published in 2016).

Clements, D. H., &Gullo, D. F. (1984). Effects of computer programming on young children's Cognition. *Journal of Educational Psychology, 76(*6), 1051-1058. https://doi.org/10.1037/0022-0663.76.6.1051.

Creswell, J. W. (2017). *Karma Yöntem araştırmalarına giriş.* (M. Sözbilir, Çev. Ed.). Pegem Akademi. (Original publication of the study 2015).

Cevahir, H., & Demir, Ü. (2020). Algoritmik düşünme yeterliliği ile problem çözme becerisi arasındaki ilişkinin incelenmesi: mesleki ve teknik Anadolu Lisesi örneği. *Kastamonu Eğitim Dergisi*, *28*(4), 1610-1619. https://doi.org/10.24106/kefdergi.4179.

Çakmak, Z., & Taşkıran, C. (2014). Sosyal Bilgiler öğretmen adaylarının bilgisayar destekli eğitime yönelik tutumlarının çeşitli değişkenlere göre incelenmesi, *International Periodical For The Languages, Literature And History Of Turkish or Turkic*. *9*(5), 529-537.

Çetin, E. (2012). *The effect of computer programming education on children's problem solving skills.* (Master's thesis). Gazi University-Ankara. Council of Higher Education National Thesis Centre. (349116)

Çiftçi, E., Karal, H., & Yıldız, A. G. M. (2017). Computational thinking and programming, *Educational Technologies Readings.*59(5), 76-86.

Demir, Ö., & Çamlı, Ö. (2011). Investigating the problems encountered in practice schools in teaching practice course within the framework of classroom and pre-school teaching students' opinions: A qualitative study. *Journal of Uludag University Faculty of Education*, *24*(1), 117-139.

Demirer, V., & Sak, N. (2016). Programming education and new approaches in the world and Turkey. *Theory and Practice in Education,12*(3), 521-546.

Deniz, T. (2021). *The effect of coding education designed with different visual programmes on middle school students' academic achievement, attitudes towards coding and self-efficacy.* (Master's thesis). Necmettin Erbakan University-Konya. Council of Higher Education National Thesis Centre. (675166).

Doğan, E. (2017) The effect of teaching earthquake subject in Social Studies course with digital game on academic achievement. (Master's thesis). Cumhuriyet University. Sivas

Doğan, E., & Koç, H. (2017). The impact of instructıon through digital games on students' academic achievement in teaching earthquakes in a social science class. *International Journal of Turkish Educatioan Sciences.* 5(8), 90-100.

Erkan, A. (2019). The effect of educational game and digital game teaching used in primary school 4th grade social studies course on students' achievement and attitudes (Doctoral dissertation). Fırat University, Elazığ.

Ermac, E., & Suson, R. (2020). Computer aided ınstruction to teach concepts in education. *ınternational journal on emerging Technologies, 11*(3), 47-52.

Erol, O. (2020). *Kodlama öğretimi; programlamadan kodlamaya yaklaşımlar ve örnek uygulamalar.* Anı.

Eshet-Alkali, Y., & Amichai-Hamburger, Y. (2004). Experiments in digital literacy. *Cyber Psychology & Behavior*, *7*(4), 421-429. https://doi.org/10.1089/cpb.2004.7.421

Fesakis, G., & Serafeim, K. (2009). Influence of the familiarization with scratch on future teachers' opinions and attitudes about programming and ıct in education. *Conference: Proceedings Of The 14th Annual Sıgcse Conference On Innovation And Technology İn Computer Science Education, Acm Sıgcse Bulletin. 41*(3), 258-262. Iticse. Doı:10.1145/1562877.1562957

Gülbahar, Y., & Kalelioğlu, F. (2014). The effects of teaching programming via Scratch on problem solvingskills: A Discussion From Learners Perspective. *Informatics in Education-An International Journal, 13*(1), 33-50.

Hatakka, M., & Lagsten, J. (2011). The capability approach as a tool for development evaluation–analyzing students use of internet resources. *Information Technology for Development*, *1*(18), 23-41.

Henkoğlu, Ş., Mahiroğlu, H. & Keser, H. (2015). Secondary school students' approaches to the internet as a means of access to information: a descriptive study, *Turkish Online Journal of Qualitative Inquiry or Turkey.1*(6) 72-110.

Hicks. D., & Ewing. E. T. (2003). Bringing the world into the classroom with online global newspaper. social education online newspaper. *Natıonal Council For De Social Studies, 67*(3), 134-139.

Hiltz, R.S., & Turoff, M. (2002) What makes learning networks effective? Supporting Community And Building Machinery. *45*(4), 56-59.

Hovardaoğlu, S. (2007). *Davranış bilimleri için araştırma teknikleri.* Hatiboğlu.

https://codeweek.eu/).

Hücüptan, M.L. (2006). Bilgisayar destekli öğretimin 6. sınıf Sosyal Bilgiler dersi öğrenci başarısına etkisi. (Yüksek lisans tezi). Sakarya Üniversitesi-Sakarya. Yükseköğretim Kurulu Ulusal Tez Merkezi. (186669).

İlter, İ. (2013). Inquiry-based learning model in Social Studies course: examination of achievement and retention in learning. *Electronic Turkish Studies*, *8*(12), 591-605.

International Society for Technology in Education (ISTE) (2016). https://www.iste.org/explore/ISTE-blog/The-2016-ISTE-Standards-for-Students-are-here%21

Jaworski, B. (1994). *Investigating Mathematics Teaching: A Constructivist Enquiry.* Routledge.

Jenkins, T. (2002). On the dıffıculty of learnıng to program. ın procedings ofther dannual confrence of the centrefor ınformation and computer sciences. *Inside the 3rd Annual LTSN_ICS Conference.* Loughborough University, 53-58.

Karabak, D., & Güneş, A. (2013). Curriculum proposal in the field of software development for middle school first grade students. *Journal of Research in Education and Teaching, 2*(3), 175-181.

Kehagias, A., & Vlachos P. (1999). Computer aided ınstruction vs. traditional teaching: comparison by a controlled experiment. *American College of Thessaloniki*, 7, 87-104.

Koka, V. (2018). The effect of computer-aided educational games used in social studies course on students' course success. (Master's thesis). İnönü University/Institute of Educational Sciences.

Kulik, C.L.C., & Kulik, J.A. (1991) Effectiveness Of Computer Based Instruction; An Updated Analysis. *Computers İn Human Behaviour, 7*(1-2), 75-94.

Kuzhan, M. (2019). Analysing the researches on the educational use of the Internet. *International Journal of Educational Researchers*, 2(2), 137-145.

Morrison, G. R., Ross, S. M. Gopalakrishnan, M. & Casey, J. (1995). *The effects of feedback and incentives on achievement in computer-based instruction.* Contemporary Educational Psychology, *20*(1), 32–50. https://doi.org/10.1006/ceps.1995.1002

Mindivanli-Akdoğan, E. & Öner, Ü. (2021). Sosyal bilgiler dersi için örnek oyun uygulamaları. E. Yıldız ve Ü. Şimşek (Eds.). In ortaokullar için eğitsel oyun uygulamaları kuramdan uygulamaya (ss.267-314). Nobel.

Mishra, P., & Girod, M. (2007). Designing learning through learning to design. *The High School Journal, 90*(1), 44 – 51.

Nartgün, Ş.S. (2002) Education in Turkey on the road to becoming an information society. *Journal of Educational Research*, *6,* 131-135.

Okal, G., Timur, S., & Yıldırım, B. (2020). the effect of coding education on 5th, 6th and 7th grade students' programming self-efficacy and attitudes about technology. *Educational Policy Analysis and Strategic Research,* 15(2), 143-165.

Prensky, M. (2001). Fun, play and games: What makes games engaging. *Digital game-based learning*, *5*(1), 5-31.

Project Tomorrow (2008). Speak Up 2007 for Students, Teachers, Parents & School Leaders Selected National Findings. http://www.tomorrow.org/docs/national%20findings%20speak%20up%202007.pdf

Rakes, G. (1996). Using the ınternet as a tool in a resource-based learning environment. *Educational Technology, 36*(5), 52-56.

Resnick, M., & Silverman, B. (2005, June). Some reflections on designing construction kits for kids. In *Proceedings of the 2005 conference on Interaction design and children* (pp. 117-122).

Sarıkaya, A., Alptekin, A., & Köroğlu, A. Y. (2022). The Effect of Stem Education Programme on Visual Perception Development of Preschool Children. *Journal of Multidisciplinary Studies in Education*, *6*(2), 54-63.

Sayın, Z., & Seferoğlu, S. S. (2016). Coding education and the effect of coding on education policies, XVIII. *Academic Informatics Conference. Adnan Menderes University.* Aydın.

Settle, A., & Perkovic, L. (2010, Haziran). Computational Thinking across the Curriculum: A Conceptual Framework (*Technical Reports*/13). http://via.library.depaul.edu/tr/13/.

Shayan, Z. (2015). Students' use of internet in learning: *The Case of Erciyes University*. Retrieved from Academia.edu.

Şahin, E. (2019). Application and analysis of coding teaching using robotic tools and materials in 6-12 age groups. (Master's thesis). Marmara University-Istanbul. Council of Higher Education National Thesis Centre. (581434).

Şenyurt, Ö. (2015). Information services projects in Turkish education system. *Hacettepe University Information and Document Management Department.*

Tonbuloğlu, B., & Tonbuloğlu, S. (2019). The effect of unplugged coding activities on computational thinking skills of middle school students, *Vilniaus Universiteto Leidykla. 18*(2), 403-426.

TUIK (2021). https://data.tuik.gov.tr/Bulten/Index?p=Cocuklarda-Bilisim-Teknolojileri-Kullanim-Arastirmasi-2021-41132

Ural, A., & Kılıç, İ. (2006) *Bilimsel araştırma süreci ve SPSS ile veri analizi.* Detay.

USA Computing Olympiad. (2015). http://www.usaco.org/index.php?page=dec15results

Weintrop, D., Beheshti, E., & Horn, M. (2016). Defining computational thinking for mathematics and science classrooms. *International Journal of Mathematical Education in Science and Technolog, 25*(1), 127–147. https://doi.org/10.1007/s10956-015-9581-5

Yağar, F., & Dökme, S. (2018). Planning qualitative research: research questions. Sample selection, validity and reliability. *Gazi Journal of Health Sciences*, *3*(3), 1-9.

Yeşiltaş, E., & Turan, R. (2010). The Effect of Computer Software Developed for Social Studies Teaching on Academic Achievement and Attitude. *International Journal of Turkish Educational Sciences*, 2015(5), 1-23.

Mapping Teacher-Produced Tests to a Usefulness Model

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Abstract

Tests are designed as an integral part of the teaching process, necessarily including stakeholders from the onset of preparations to grade allocation, the administration of the test, and the interpretation of the results. The process commences with selecting content to evaluate, deciding upon the skills to be tested, and meeting course objectives (Giraldo & Murcia Quintero, 2019; O'Louglin, 2013; Vogt and Tsagari, 2014). Several questions arise in terms of how to standardize the development process and evaluate its usefulness. Typically, what is the best test for our context? What does this test actually test? What relevant information does the test provide? How does this test affect teaching and learning behavior? And in what ways is the test useful? Although each language program's particular needs may differ, the answers given to the questions above provide a basis for institutional decisions. None are set in stone, and at their root is the critical role testing plays in facilitating what gets learned. The current study initiated action to develop and analyze an achievement test specifically designed for a compulsory A1-level English course delivered to all freshmen students enrolled in Turkish-medium departments at state universities across Türkiye. 150 students who are enrolled in several undergraduate programs at the Faculty of Education at a state university constituted the universe of the study. The researcher analyzed the test after administration and mapped the qualities according to a test usefulness model, aiming to address the research gap regarding quality teacher-produced tests.

Keywords: ELT, Test Usefulness, Measurement and Evaluation, Teacher-Produced Tests

Introduction

Language tests are a component of the teaching and learning process, and they are used for a variety of purposes that are mainly divided into two broad categories. The first use of language tests is to make inferences about the language abilities of the students, that is, the extent to which they can use language to perform tasks in life (Bachman, 1991, p. 680). It can be inferred from the statement that a test has the purpose of measuring the test takers' ability or competence level in a given domain and their capacity for non-test language use. The second main use of language tests is to refer to them when making decisions based on what is inferred from test scores (Ballıdağ & Karagül, 2021; Bachman & Palmer, 1996; Coombs et al., 2018; Heaton, 1990; Hughes, 2010; Luoma, 2001). The decisions are for selection, diagnosis, placement, progress, grading, certification, and employment purposes. These two major roles indicate the significance of using a concrete, valid framework in designing, implementing, and scoring. A sound test enables us to make inferences about levels or profiles of ability, or predictions about the capacity to perform future tasks in non-test language use contexts. Bachman (1991) argues that the language abilities measured by testing should correspond to the features of a target language's context, depending on the settings. In an instructional setting, a test can be designed to measure the degree of the learners' mastery of the language skills covered in the curriculum. It is essential that the content of the test be representative of the content of the course. The correspondence between the course content and the test provides grounds for interpreting test scores. In other words, test scores confirm what the students and teachers have mastered. There is limited research concerning teacher-produced tests, as they may not lend themselves to as much introspection as standardized, high-stakes tests. Thus, the measurement and evaluation skills of teachers and how their skills relate to classroom instruction are worth thorough analysis to abolish the discrepancy between evaluation practices in various contexts (Galluzzo, 2005; Marzano, 2020; Mertler, 2004; Shohamy, 2020). Inservice professional development programs can provide teachers with reflective opportunities to collaborate on practices to better their testing development and take essential test qualities into consideration (Bonner et al, 2018; Cizek, 2000; Fulcher, 2012; Höl, 2023; Shohamy, 2020). Teachers can

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participate in test preparation, administration, and scoring processes through which there is the possibility of positive backwash for the accountability of classroom instruction, tests, and schools (Bachman, 2000; Brown, 2013; Cochran, McCallum, & Bell, 2010; Sahlberg, 2006).

Literature Review

An overview of the history of test development theory and practice would shed light on the theoretical background of the present study and how it influenced its preparation and analysis. In his seminal article 'Linguistics and Language Testers,' Spolsky divides up the developments in approaches to testing a second language into three distinct eras (Spolsky, 1978). In what he calls the pre-scientific era, tests were based on the expertise of the test writers, which would, at the time, suffice for a test to be considered valid and reliable. This period was followed by a 'psychometric structuralist' approach era in which one could observe the effects of general trends in approaching social sciences. The period, thus, perceived language to be dissected into its components as isolated sounds, words, or structures without a context. It relied heavily on the comparison of L1 and L2 and assumed that the difficulties in second language learning depended on the differences between L1 and L2 (Brown, 2013; Lado, 1964; Luoma, 2001; Willis, 2003). At the time, statistical analysis of items in classical tests was done (Stansfield, 2008), but not intensively. In the 1970s, the 'integrative-sociolinguistic' approach was widely accepted, and statistics was widely used for the analysis of the tests, going beyond merely item analysis (Bachman, 2000; Huot, 1990; Lantolf & Frawley, 1985; Oller, 1976). Oller found via statistical analysis that compartmentalizing language was not a reliable path to assess language proficiency. Cloze tests, which at the time became widely used and remained popular until today, were very effective for testing grammar in context (Abraham & Chapel, 1992; Brown, 2013; Darwesh, 2010; Spolsky, 2002). The debate about the validity and reliability of tests as a whole in representing language proficiency led to the need to define language proficiency. The debate was also triggered by the introduction of the communicative approach to language teaching by Hymes (1972) and Halliday (1973). In the 1980s, Canale and Swain began publishing the Applied Linguistics Journal, with which they legitimized the importance attached to the teaching of 'communicative competence,' encompassing grammatical, sociolinguistic, and strategic competence, and the testing of these competences (Canale & Swain, 1980; Read & Chapelle, 2001; Kirschner, Spector-Cohen, & Wexler, 1996). In the 1990s, language testing specialists felt the need to discuss common professional and ethical aspects of language testing, which led to the birth of the International Language Testing Association (ILTA), whose official publications were Language Testing and Language Testing Update. ILTA was followed by the Association of Language Testers in Europe (ALTE) in 1990 and the European Association for Language Testing and Assessment (EALTA) (Wu & Stansfield, 2001). The foundation of many testing and assessment-oriented associations on a national and international scale worldwide has made language testing and research more professional and collaborative.

The 21st century has boosted creativity in research methodology, factors that affect performance, authentic assessment concerns, and the ethics of language testing (Bachman, 2000). Testing is rooted in classical theory that has been extended, as in Generalizability Theory which helps testers understand the effects of the sources of measurement errors (for an overview of G-theory, see Bachman, 1997). Item response theory (IRT) has become a widely used tool as a measurement model that allows for statistical properties of items and abilities of test takers in large-scale language proficiency tests (Bachman & Eignor, 1997; Pollitt, 1997). The Rasch model is still commonly used in language testing (Adams et al., 1987; Lynch et al., 1988; McNamara, 1991; Bolt, 1992) to investigate the effects of raters and tasks in language performance assessments (Brown, 1995; Lumley & McNamara, 1995; Weigle, 1998). Test takers' background features, their use of strategies, and the relationship between language aptitude, proficiency, and intelligence have been intense topics in Structural Equation Modelling (SEM) (Ginther and Stevens, 1998; Purpura, 1997; Sasaki, 1996). Recently, however, the general tendency in trait perspectives has been to integrate quantitative approaches such as G-theory, IRT, and SEM into an analytic paradigm.

Qualitative research approaches have also become widespread as they are used to include test takers' characteristics, processes, and tactics, as well as the description of the discourse created in language assessments (Banerjee & Luoma, 1997; Cochran, McCallum, & Bell, 2010; Fulcher, 2012; Horwitz, 2001; Latif & Wasim, 2022; Shohamy, 2001). Retrospective and introspective verbal reports, observations, questionnaires, interviews, and discourse analysis are within the scope of qualitative approaches to testing. As language testers become more experienced in combining quantitative and qualitative measures, the results of language tests are reported in both fashions (Clapham, 1996; Sasaki, 1996). This eases the focus on traditional areas of linguistic competence and the four main skills of language, which lead to the development of prototype test instruments. These test instruments embody a selection of task types, such as multiple choice, response items with cues, structured interviews, and self-assessment checklists, which are particularly relevant in the communicative framework of language testing. There has been a tendency towards 'performance' assessment and a movement towards what has been referred to variously as 'alternative assessment' (Aschbacher, 1991; Terwilliger, 1998). 'Authenticity' as a relative quality, has become one of the qualities of a good test and has displayed itself as

integrated skills items (Lewkowicz, 2000; Yamtim & Wongwanich, 2014). Validity, reliability, interactiveness, practicality, and impact proceed from authenticity (Alderson and Hamp-Lyons, 1996; Bailey, 1996; Wall, 1996; Shohamy et al., 1997; Cheng, 1999). As language testers have become more concerned about ethical issues, they report more on their own test development experiences and dig deeper into the issue of professionalism in conducting ethical tests.

Parallel to the shift from the 20th century's discrete outlook towards a more standardized frame with context-specific implementations in language testing, test qualities have become essential in Türkiye as well. A standardized frame with context-specific implementations bears significance because 'in Türkiye, English is currently the only foreign language that has become a compulsory subject at all levels of education' (Kırkgöz, 2008, p. 667). Language testing receives substantial attention from stakeholders. They are officials, field authorities, educational administrators, teacher educators, and teachers. In a higher education context, in a similar vein, preparing quality language tests is demanding. The Basic English Course is one of the compulsory courses in the Higher Education Council curriculum for Turkish-medium universities. However, there is an unequal distribution of social, cultural, technical, and educational opportunities for language instruction and testing (Alan, 2003; Atay, 2008; Ballıdağ, 2020; Ekşi, 2010; Gültekin, 2007; Şentuna, 2002; Tomak & Karaman, 2013). Commercial tests, which are designed by test experts, are insufficient for addressing contextual needs. Therefore, teachers who are delivering the courses hold the most important role in classroom tests. Moreover, because the Basic English Course is mandatory for all students, there is a need to standardize both content and quality and refocus on the course objectives comprehensively.

The course objectives in the current study's context are determined depending on the objectives of the annual syllabus, and class materials and tests are prepared accordingly. Although teacher-produced tests have been regarded skeptically concerning their quality, and test items on standardized tests are generally written by test specialists, pretested, and refined, teachers' awareness can be raised, and through classroom practice research case studies, the quality of the teacher-prepared achievement tests can be increased. Hence, as teachers' awareness is raised through taking responsibility for their classroom tests, they may start with determining the purpose of their tests, from checking the rate of progress to diagnosing existing and/or probable weaknesses regarding the teaching and testing process. The formative tests may serve many purposes; one of the most important of these is balancing teaching according to the assessment technique (Ballıdağ, 2020; Fanrong & Bin, 2022; Llosa, 2011). Another benefit is determining the test techniques that are appropriate for the students' needs in target language use. It is an effective tool to bring contextual needs and teaching techniques together. Summative assessment, on the other hand, is used to assess student performance at the end of the instructional period in the form of end-of-unit or semester exams. At university, midterms, quizzes, and assignments can be considered formative testing; final exams can set an example of a summative test, by the score of which students' success or failure in the course is determined regarding a semester in the academic year.

What is necessary in educational settings with a diverse teaching staff who come from different educational backgrounds and have various approaches to language teaching is to agree on a fundamental understanding of the nature of classroom instruction and create detailed test specifications to make a match between test specifications and test items. As the next step, different test method characteristics to be used are discussed depending on the level, length, syntactic complexity, type of response required, participants, purpose, and topical content. In the light of these data, teachers can produce their tests, which may be more valid and relevant to students' contextual needs as long as they are well constructed. Although the quality of teacher-produced tests has been a topic of concern among educators, who claim that they are low in quality compared to standard tests written by test specialists, Coniam (2009) states that, given the right conditions of time and support, it is possible to produce better-quality test items for practicing teachers as well and sustain a professional, reliable, and valid test.

The current study aimed to develop an achievement test for an A1-level Basic English course and evaluate the qualities of test usefulness through the stages of test specification, moderation, and item analysis. Additionally, it set out to initiate action to create 'good' tests for institutional use and form a test bank for the compulsory course delivered to freshmen students.

Research Design

It is not too much to claim that every stage of test construction requires conscientious work, as scores play a crucial role in the future success of the learners. The course objectives should be defined clearly and applied effectively in the classroom. As a result, tests may have 'a positive washback on the content of classroom teaching' (Fulcher, 2012; Lan & Fan, 2019; O'Loughlin, 2013; Sariyildiz, 2018). The Basic English Course serves many freshmen students at Turkish-medium universities. The researcher set out to formulate a unified set of guidelines for developing and evaluating language tests in light of the literature, which suggests that the adoption of such guidelines has a positive effect on classroom instruction. (Fulcher, 2012; Krashen, 1982; Latif & Wasim, 2022; Hughes, 2010; Ölmezer-Öztürk & Aydin, 2019). The study was conducted at the Faculty of Education in a state university where the medium of instruction is Turkish, and two-hour Basic English Courses

are compulsory according to the curriculum designed by the Higher Education Council that is applicable for use in all Faculty of Education departments in Türkiye. The courses are delivered not only by English teachers but also by departmental academic staff who have previously achieved a score between 60 and 100 in the Centralized Foreign Language Test (YDS) and/or Higher Education Council Language Test (YÖKDİL), both of which are standardized exams administered regularly by the Student Selection and Placement Center in Türkiye. This affords a variety of language instruction provided by academics who may not necessarily have English language teaching experience. They may also possess different beliefs about language teaching and testing in students from different disciplines (Balbay et al., 2018). It is not possible to develop an achievement test that would meet the expectations of the various programs on offer at a typical faculty; however, providing an example that is based on clearly defined stages and presenting it for common use may serve to enhance test design in similar educational settings. The following developmental steps took place in test preparation:

GOAL (Improved learning and instruction)
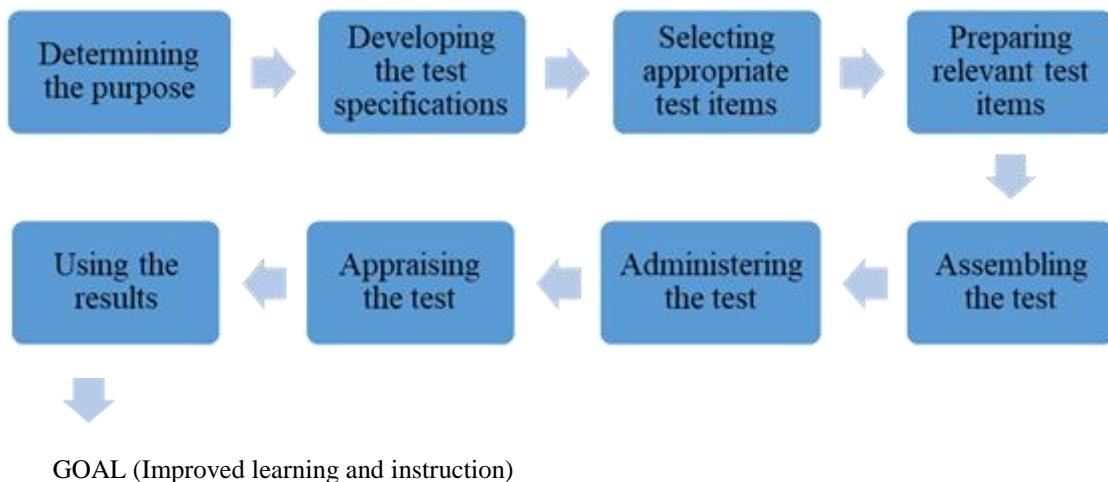
Figure 1. Steps in test preparation (Grondlund & Linn, 1990, p. 110)

Method

Purpose of the test

The purpose of this test is to measure students' knowledge and use of specific lexical and grammatical forms and the degree of their control in comprehending reading passages and writing a paragraph suitable to their level. The results obtained from the test were intended to be used for several reasons, one of which is making decisions about students' progress at the end of the term and the degree to which they have mastered the course objectives. The principles for developing the test were based on Bachman and Palmer's Test Development Suggestions (see Appendix 1). Furthermore, this test can be used to diagnose strengths and weaknesses and decide what aspects of the course might require review to assign students remedial activities.

Participants and Sampling Procedures

The students were from different undergraduate teaching programs at the Faculty of Education, such as Turkish Language, Turkish Language and Literature, Preschool, Geography, and Primary School Teaching. They had been admitted to the faculty based on their national, centralized, and standardized university placement exam. Although the total population of students is nearly 300, including students repeating the course, 150 students (40 males and 110 females) were chosen randomly for the study. Their ages ranged between 18 and 21. They were mainly Turkish students, mostly from the Central Anatolian part of Türkiye with similar educational backgrounds (Turkish state high school graduates). They took two 45-minute Basic English courses per week. A beginner-level course book (Campus Life) prepared according to the guidelines of the CEFR and its grammar component were used with supplementary materials from the internet and other sources if need be. In terms of language proficiency, they are beginner-level students who scored less than 60 (out of 100) in the English proficiency exam officially administered to students of all faculties by the School of Foreign Languages at the beginning of every academic year. Students who score 60 or more in the exam do not have to take the Basic English Course. Students who score 59 or less have to take Basic English Courses I and II during

their freshman year. For diagnostic purposes, the scores of the participants were reviewed. They ranged between 15-45. They reported that they had no exposure to English at all except for social media outside of class.

Descriptions of the Target Language Use Domain and Tasks

The overall aim of the course in the faculty curriculum is to develop basic language skills so that students can follow academic-level resources related to their areas and express themselves in academic environments. The students take the Basic English Course for two semesters in their first year, Basic English I and II, and do not receive further English language training at university. Concerning the achievement test developed, it is aimed at providing feedback on how well the students have learned the content of the course. So, the tasks were based on the language instructional domain. However, considerable effort was put into making a match between the characteristics of the instructional tasks to make them relevant to the real-life domain to maximize authenticity.

Definition of Constructs to be Measured

For this achievement test, a course book syllabus-based construct definition is used. This involves students' ability to recognize and produce correct forms of language (grammar), their ability to read passages appropriate to their level, their ability to provide suitable responses to the given situations (functional language), their ability to write short paragraphs following the provided guidelines, and their appropriate vocabulary use. The specific components below are included in the construct definition:

Research design and operationalization

At the operationalization stage, test specifications (see Appendix 2) were prepared for the various types of tasks that would be completed during the examination. Afterwards, actual test tasks were prepared, instructions were written, and procedures to be followed for scoring were determined.

Developing Test Specifications

While developing test tasks, the following table was used as a basis to prepare a content-valid test for the course.

Table 1. The distribution of skills and areas to be tested and objectives

Objectives	Reading	Grammar	Vocabulary	Functional Language	Writing	Total (%)
Infer the word's meaning from the context of the passage	5					5
Find appropriate answers to questions answered explicitly or in paraphrase	2					2
Understanding relationships among ideas in a text (cause-effect)	2					2
Find specific details (any surface-level information)	1					1
Understand explicitly stated ideas	6					6
Identify the third person's simple verb form		1				1
Discriminate the use of simple negative forms for different personal pronouns		1				1
Supply the correct preposition of time		3				3

Supply the correct preposition of place	1					1
Locate the necessary form of -be for there is/are and that/this/these/those expressions	2					2
Choose the correct expression of quantity	3					3
Supply the correct article	1					1
Recognize the correct use of possessive pronouns	1					1
Distinguish the use of can for ability	1					1
Identify cohesive devices and their functions in a text	1					1
Recall the relevant vocabulary			4			4
Write a paragraph about where he or she lives					1	1
Provide appropriate responses to the given situations				5		5
Total (%)	16	15	5	5	1	41

Inventory of available resources and plan for their allocation

The test was prepared by the researcher. Invigilators were research assistants in the departments. The tests were scored by the researcher and the other two teachers delivering the same course. Developing, administering, and scoring the tests was a normal teaching requirement for the course teachers. Since the number of students taking the course was quite high, scoring took a long time and required considerable attention. The test was administered in students' regular classrooms on a specified date in the academic calendar. It consisted of four pages. Students were expected to give their responses on the test papers. No additional sheet was provided.

Test Structure

The test is divided into four parts: It is designed as a 41 -item test that is made up of:
1. a 15-item reading comprehension, six of which consist of true or false statements
2. a 20-item multiple-choice completion test, including 4 items of vocabulary
3. 1 guided paragraph-writing item
4. a 5-item multiple-choice dialogue completion
    The topics chosen are relevant to the topics in the course book. The allotted time for the test is 60 minutes.

Scoring Procedures

All responses were scored first by the researcher and two other teachers giving the same course. Apart from the writing part, the items were scored objectively according to a scoring key. The writing part of the exam was scored according to a writing rubric specified by CEFR.

Administration and analysis of the test

The test was prepared by the researchers. After the test was administered, the papers were scored. The test items were analyzed for the identification of item difficulty and item discrimination, which contribute to reliability measures. The following test item analysis table was formed according to the results:

Table 2. Item Analysis

Item	Item	Item	Item	Item	Item

number	difficulty	discrimination	number	difficulty	discrimination
1*	0.22	0.26	21	0.36	0.42
2	0.78	0.47	22	0.61	0.38
3	0.69	0.32	23	0.81	0.93
4	0.57	0.49	24	0.79	0.81
5	0.26	0.32	25	0.78	0.93
6	0.62	0.30	26	0.87	0.71
7	0.78	0.89	27	0.42	0.58
8	0.74	0.69	28	0.39	0.54
9	0.52	0.36	29	0.25	0.31
10	0.40	0.33	30	0.28	0.32
11	0.61	0.55	31	0.20	0.33
12	0.56	0.42	32	0.67	0.57
13	0.63	0.30	33	0.62	0.70
14	0.30	0.29	34	0.41	0.30
15	0.34	0.30	35	0.53	0.72
16*	0.42	0.27	36*	0.37	0.15
17	0.74	0.91	37	0.22	0.31
18	0.57	0.54	38	0.47	0.45
19	0.30	0.32	39	0.36	0.39
20	0.36	0.47	40	0.44	0.56

The average of correct answers	20.651
The average of item difficulty	0.507
Standard deviation	5.178
KR	0.697

Table 3. Item discrimination criteria

0.40 and above	Fairly discriminating
0.39 - 0.29	Discriminating
0.29 - 0.19	Needs improvement
0.19 and below	Needs to be replaced

questions *1 (0.26), * 16 (0.27) and* 36 (0.15)

The average index of difficulty was 0.507, which was satisfactory. The items with a difficulty level of 70 or above were accepted as easy. 9 questions (2, 7, 8, 17, 23, 24, 25, 26, and 35) were answered correctly by most of the students. The questions with a difficulty level of 30 or below were accepted as difficult items. 8 questions (1, 5, 14, 19, 29, 30, 31, and 37) were difficult questions. The facility value of the remaining items (23 questions) varied within the range of 0.31 and 0.69. In general, the items in the test have a desirable level of difficulty.

Results Regarding the Usefulness of the Test

Certain types of reliability, validity, and practicality are emphasized in Bell's (1981) ideal test. Authenticity, interactiveness, and impact are also considered qualities that add to the overall usefulness of the test (Brown & Abeywickrama, 2010; Douglas, 2000). Although the degree of each of these qualities may differ to fit the purpose, they cannot be evaluated independently. Nevertheless, the aim of the current study was to maximize the application of each quality in our test.

Test Reliability

Several aspects of reliability were considered to accommodate the wide range of language elements in the course syllabus, and the researcher increased the number of task types and questions compared to the previous midterm test. For the scoring to be objective, mostly multiple-choice testing was used. When the external factors related to the test papers are considered, utmost attention is paid to eliminating any kind of ambiguous wording of instructions. The exam setting was a familiar, quiet, well-lit classroom in the students' own department building. Following the scoring of the written component of the exam, two teachers then checked for the inter-rater reliability put forward by Miles and Huberman's formula (1994). The result was 85%, which is considered acceptable. Thereafter, the Kuder-Richardson formula (KR20) was used to determine internal consistency, and a satisfactory result of 0.697 was obtained.

Test Validity

The textbook used in the Basic English course is prepared for university students and young adults, following CEFR principles. It adopts a multi-strand syllabus and a skills-based approach built on communicative language teaching. Construct validity is achieved by defining constructs consistent with the purpose of the test and designing test tasks that will facilitate the researchers making inferences about language ability that match these definitions. What is covered in the classroom is reflected in the test. A multiple-choice format is preferred as the dominant test type for practical reasons, as it lends itself to covering many objectives. Grammar and vocabulary items were contextualized. Each module in the course book was designed to integrate all four skills. However, listening and speaking are not tested due to insufficient facilities and equipment. Lack of time and staff negates any testing for speaking, either. For content validity, a table of specifications describing the language areas or skills with their percentage weights was identified as the first step. Concerning face validity, to refrain from a negative impression that will affect student motivation, long and unclear instructions were eliminated. Two teachers and two research assistants were asked for their expert comments on their impression of the test.

Test Authenticity

The course book followed is relevant to students' needs in that it addresses the appropriate age group. The topics are carefully selected and are all relevant to the lives of university students. The characters, situations, and events in the questions are all connected to life on campus. This contributes a great deal to the authenticity of the test in that there is a correspondence between the characteristics of the target language's use context and the activities in the book. Authenticity has been defined in several ways in language testing circles. Some take it as face validity, namely, the test's appealing power on the test takers. However, this view is critical, as Davies (1997) maintains that a test that appeals to test writers may be different from one that appeals to students and teachers. Another common and simple definition of authenticity is 'real-life-like' language use (Hoekje & Linnell, 1996; Lewkowicz, 2000; Pill, 2016; Wu & Stansfield, 2001). The researcher utilized CEFR skill descriptions as a route map. In the initial part of the exam, the same discourse related to the daily routines of people working in different occupations was used as that featured in the textbook. This part was prepared to activate the content of what was spoken or written frequently in real life and during the course. Hence, utmost attention was paid to contextualizing multiple-choice questions. Consequently, the test items have a moderate level of authenticity.

Test Interactiveness

The test can be regarded as relatively interactive. The students' knowledge, metacognitive strategies, topical knowledge, and affective states determine the degree of interactiveness of a language test. In the first part of the exam, an excerpt about a person's everyday life was provided with blanks to test grammar and vocabulary. The purpose of constructing those items was to require the students to use language with reference to the world in which they live and activate their schemata and topical knowledge. In the situational dialogues section, the aim was to assess students' degree of mastery in functional language. Interactiveness was relatively high since the test task reflected the communicative use of the language to express and interpret meaning in terms of test takers' experience of the real world.

Test Impact

The stakeholders in the test were the students, researchers, language instructors, and departmental academic staff delivering the course. The scores were the students' final grades, which had a 50% effect on their total grade. This was the final and largest component of the total evaluation, and they would either pass or fail the course based on their scores. Considering the impact on instruction, the results of the test indicated that supplementary reading materials appropriate to their level, such as a compiled reading pack, are necessary. Besides, the scores of the test served diagnostic purposes. Especially in some groups, the scores revealed that particular areas in the syllabus needed remedial activities regarding mother tongue interference in some structural points.

Test Practicality

For this achievement test, practicality was one of the most significant aspects of its usefulness, as tests of this type are fairly demanding in terms of cost. The test in this study was cost-effective in that it required only the exam papers to be printed and no other preparation. A legible standard font size and style were chosen. Multiple choice was chosen for ease of scoring in most parts of the test. Concerning practicality, students were asked to circle the correct alternative on the question booklet and not on a separate sheet, which made it easy to answer. Nevertheless, the researcher needed to pay extra attention when scoring the questions one by one. In the administration stage, research assistants from the departments whose students took the exam were the invigilators. When it comes to practicality concerning the content of the test, the high cost of using communicative items in all parts of the test inevitably limited their use. Thus, the reason for using a mostly objective type of testing and objective question types, such as multiple-choice questions, is to avoid the scorer having to spend too much time on each paper. Add results and findings here. Add results and findings here. Add results and findings here. Add results and findings here. Add results and findings here. Add results and findings here. Add results and findings here. Add results and findings here. Add results and findings here. Add results and findings here. Add results and findings here.

Discussion and Conclusions

The current study aimed to develop a summative test for a compulsory Basic English course delivered to all freshmen students attending Turkish-medium universities. Various stages of test construction include writing test specifications, writing test items, moderating test items, standardizing the scoring key, administering the test, monitoring quality (Item Analysis), and refining and finalizing the test. The test was prepared to reflect classroom instruction, and almost all the areas covered in the course were included in the test except speaking and listening activities. Although these were integral to the course, they were not included in the exam due to time and cost efficiency concerns. However, to approximate classroom instruction and the test as much as possible, dialogue questions were added, which may be considered an indirect way of testing speaking. The utmost care was given to the wording of the test questions. The test was used for grading purposes and provided feedback on the achievement of the students. The test analysis process also served diagnostic purposes. An action plan was designed for the areas that needed remedial work. One of the aims of the study was to initiate action to form a question bank for this course. Course instructors were invited to exchange ideas on this issue. In general, there was a positive attitude towards forming a question bank by continuing the example in this context.

The present study depicts the preparation process of a summative test and the analysis of the results in detail. The problems identified can be symptomatic of deeper reasons underlying them; hence, this study bears significance in that the requirement for 'good' test design and administration is usually based on theoretical and normative literature; however, the exploration of an actual test preparation, administration, and analysis practice at institutions similar to the one in this study, such as Turkish-medium state universities in Turkiye, may shed light on good practice for the benefit of all practitioners teaching and assessing freshman English courses, which are currently a required course at all higher-level educational institutions in the country.

The researcher reached several conclusions. Firstly, the test can be regarded as a good test characterized by the test's usefulness features, which were mapped according to Bachman and Palmer's (1996) Test

Development Model. Secondly, it provides a tangible resource that instructors can use to enhance their teaching methods and improve their content. Throughout the development of the test, the researcher collaborated with teachers and gained insights from them regarding their increased awareness of the significance of analysis in test quality. They stated their opinions on how collaboration for test preparation and following a set of guidelines for a unified model as suggested in the study could be put into practice and the needs of all departments taken into consideration. Furthermore, they stated that the test set an example to shape their classroom instruction and testing, complementing each other.

Tests may have positive feedback, as the teachers stated, on the content of classroom instruction. Some doubts have been raised as to whether teachers' methodology is affected by teacher-produced tests. Studies regarding the test quality of teacher-produced tests coincide with the researchers' claim when they initiated work on all the stages of the test; that is, no single test can meet all the needs, and no conclusion can be drawn for classroom instruction methodology. However, the researcher's experience throughout the study is in line with the studies that are for teacher-produced tests (Ahmad & Rao, 2012; Coniam, 2009; Galluzzo, 2005; Lan & Fan, 2019; Marzano, 2020; Mertler, 2004; Shohamy, 2020), which report that merely an exam on its own cannot reinforce an approach to teaching until the efforts of material designers, testers, and teachers are united by shared values. Therefore, the study is significant in that it brought the immediate stakeholders together to work on the development and analysis of the test's usefulness based on a model that utilized the teaching materials used on the course. If the researcher did not have a fundamental understanding of the nature of communication between teachers and their students, creating detailed test specifications, achieving a fit between those specifications and test items, and analyzing the test's usefulness would not have brought about a desire amongst stakeholders to apply the same model to create future tests for the course test bank.

Limitations

Data collection (test development) rests on questions generated through a one-shot achievement test. During the stages of preparation, administration, and grading, test specifications, items, and their analysis data were obtained from the participants in the study. Different tests distributed at several intervals could be used to increase the reliability of the data; however, formal constraints from the faculty, namely, the official allocation of tests in allocated settings for the mid-term and final exam periods. Data gathering can be expanded by following the same stages in a longitudinal study. The research is only limited to the so-called departments given above at a state university. More and varied data can be gathered from different departments, and they would have implications for further quantitative and qualitative studies. To have a deeper understanding and a mutual agreement with the teachers delivering the courses, personal conversations were conducted in office settings. Adopting mixed-methods approaches would yield more profound results.

References

Abraham, R. G., Chapelle, C. A. (1992). The meaning of cloze test scores: An item difficulty perspective. Modern Language Journal, 76(4), 468–479. https://doi.org/10.1111/j.1540-4781.1992.tb05394.x

Adams, R. J., Griffin, P. E., Martin, L. (1987). A latent trait method for measuring a dimension in second language proficiency. *Language Testing. 4*(1), 9–28.

Ahmad, S., Rao. (2012). A Review of the Pedagogical Implications of Examination Washback. *Research on Humanities and Social Sciences, 2(*7), 11- 20.

Alan, B. (2003). Novice teachers' perceptions of an in-service teacher training course at Anadolu University. Unpublished master's thesis. Bilkent University, Ankara.

Alderson, J. C., Hamp-Lyons, L. (1996). TOEFL preparation courses: a study of washback. *Language Testing. 13*(3), 280–97.

Aschbacher, P. R. (1991). Performance assessment: state of activity, interest, and concerns. *Applied Measurement in Education, 4*, 275–288.

Atay, D. (2008). Teacher research for professional development. *ELT Journal, 62*(2), 139-147.

Bachman, L. F. (1991). 'What Does Language Testing Have to Offer?' *TESOL Quarterly, 25*, 671-704.

Bachman, L. F., Lynch, B. K. & Mason, M. (1995). Investigating variability in tasks and rater judgments in a performance test of foreign language speaking. *Language Testing 12,* 238-257.

Bachman, L. F. & Palmer, A.S. (1996). Language testing in practice. Oxford University Press.

Bachman, L.F. & Eignor, D.R. (1997). Recent advances in quantitative test analysis. In Clapham, C. and Corson, D., editors, Encyclopedia of language and education. Volume 7: Language testing and assessment. Kluwer Academic Publishers, 227–242.

Bachman, L.F. (1997). Generalizability theory. In Clapham, C. and Corson, D., editors, Encyclopedia of language and education. Volume 7: Language testing and assessment. Kluwer Academic Publishers, 255–262.

Bachman, L. F. (2000). 'Modern language testing at the turn of the century: Assuring that what we count counts.' *Language Testing, 17*, 1-42.

Bailey, K.M. (1996). Working for washback: a review of the washback concept in language testing. *Language Testing. 13*(3), 257–79.

Balbay, S., & Pamuk, I., Temir, T. Doğan, C. (2018). Issues in pre-service and in-service teacher training programs for university English instructors in Turkey. *Journal of Language and Linguistic Studies, 14*(2), 48-60.

Ballıdağ, S. (2020). Exploring the Language Assessment Literacy of Turkish In-service EFL Teachers. https://doi.org/10.06.2020.

Ballıdağ, S., & Inan Karagül, B. (2021). Exploring The Language Assessment Literacy of Turkish In-service EFL Teachers. *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *24*(45), 73 – 92. https://doi.org/10.31795/baunsobed.909953

Banerjee, J., Luoma, S. (1997). Qualitative approaches to test validation. In Clapham, C. and Corson, D., editors, Encyclopedia of language and education. Volume 7: Language testing and assessment. Dordrecht: Kluwer Academic, 275–287.

Bell, R. T. (1981). An introduction to applied linguistics. Batsford Academic Ltd.

Bolt, R.F. (1992). Cross Validation of item response curve models using TOEFL data. *Language Testing. 9*, 79–95.

Bonner, S. M., Torres Rivera, C., & Chen, P. P. (2018). Standards and assessment: Coherence from the teacher's perspective. *Educational Assessment, Evaluation and Accountability, 30*,71-92.https://doi.org/10.1007/s11092-017-9272-2.

Brown, A. (1995). The effect of rater variables in the development of an occupation-specific language performance test. *Language Testing. 12*(1), 1–15.

Brown, H. D. (2004). Language assessment: Principles and classroom practices. Longman.

Brown, J. D. (2013). My twenty-five years of cloze testing research: So, what? *International Journal of Language Studies, 7*(1), 1-32.

Brown, H. D., Abeywickrama, P. (2010). Language Assessment. Principles and Classroom Practices. White Plains.

Bull, M. and Yoneda, M. (2012). Designing assessment tools: The principles of language assessment. *Humanities and Social Sciences, 60,* 41－49.

Canale, M. & Swain, M. (1980). Theoretical bases of communicative approaches to second language teaching and testing. *Applied Linguistics, 8*, 67–84.

Cheng, L. (1999). Changing assessment: washback on teacher perceptions and actions. *Teaching and Teacher Education. 15, 253–271.

Cizek, G. J. (2000). Pockets of resistance in the assessment revolution. *Educational Measurement: Issues and Practice, 19*(2), 16-23. https://doi.org/10.1111/J.1745-3992.2000.TB00026.X

Clapham, C. (1996). The development of IELTS: a study of the effect of background knowledge on reading comprehension. University of Cambridge Local Examinations Syndicate/Cambridge University Press.

Cochran, J. L., McCallum, R. S., Bell, S. M. (2010). Three A's: How Do Attributions, Attitudes, and Aptitude Contribute to Foreign Language Learning? *Foreign Language Annals, 43*(4), 566–582.

Coniam, D. (2009). Investigating the quality of teacher-produced tests for EFL students and the effects of training in test development principles and practices on improving test quality. *System,37*, 226–242.

Coombs, A., DeLuca, C., LaPointe-McEwan, D., & Chalas, A. (2018). Changing approaches to classroom assessment: An empirical study across teacher career stages. *Teaching and Teacher Education,71,* 134-144. https://doi.org/10.1016/J.TATE.2017.12.010.

Darwesh, A. J. A. (2010). Cloze tests: An integrative approach. *Journal of the College of Basic Education, 15*(64), 105-116.

Davies, A. (1997). The construction of language tests. Oxford University Press.

Douglas, D. (2000). Assessing language for specific purposes: theory and practice. Cambridge University Press.

Ekşi, G. (2010). An assessment of the professional development needs of English language instructors working at a state university. (Unpublished master's thesis). Middle East Technical University, Ankara.

Fanrong, W., & Bin, S. (2022). Language Assessment Literacy of Teachers. In Frontiers in Psychology (Vol. 13). Frontiers Media S.A. https://doi.org/10.3389/fpsyg.2022.864582.

Fulcher, G. (2012). Assessment literacy for the language classroom, *Language Assessment Quarterly, 9(*2), 113-132, https://doi.org/10.1080/15434303.2011.642041.

Galluzzo, G. R. (2005). Performance assessment and renewing teacher education the possibilities of the NBPTS standards. The Clearing House: *A Journal of EducationalStrategies, Issues,and Ideas, 78*(4), 142-145. https://doi.org/10.3200/TCHS.78.4.142-145.

Ginther, A., Stevens, J. (1998). Language background and ethnicity, and the internal construct validity of the Advanced Placement Spanish Language Examination. In Kunnan, A.J., editor, Validation in language assessment. Lawrence Erlbaum, 169–94.

Giraldo, F., & Murcia Quintero, D. (2019). Language Assessment Literacy and the Professional Development of Pre-Service Language Teachers. *Colombian Applied Linguistics Journal, 21*(2), 243–259. https://doi.org/10.14483/22487085.14514.

Grondlund, N. E., Linn, R. L. (1990). Measurement and Evaluation in Teaching. Macmillan.

Gruba, P. and Corbel, C. (1997). Computer-based testing. In Clapham, C., Corson, D., editors, Language testing and assessment. Language testing and assessment. Dordrecht: Kluwer Academic, 141–149.

Gültekin, İ. (2007). The analysis of the perceptions of English language instructors at TOBB University of Economics and Technology regarding inset content. Unpublished master's thesis. Middle East Technical University, Ankara.

Halliday, M. A. K. (1973). Explorations in the functions of language. Edward Arnold.

Heaton, J. B. (1990). Writing English language tests. Longman.

Hoekje, B. & Linnell, K. (1996). Authenticity in language testing: Evaluating language tests for international teaching assistants. *TESOL Quarterly, 28*(1), 103-126. https://doi.org/10.2307/3587201.

Horwitz, E. (2001). Language anxiety and achievement. *Annual Review of Applied Linguistics. 21*(1), 112-126.

Höl, D. (2023). Standardized testing in Turkey: EFL teachers' perceptions and experiences on Cambridge Young Learner Exams (YLE). International Journal of Curriculum and Instruction. 15(2), 984-1007.

Hughes, A. (2010). Testing for language teachers. CUP.

Huot, B. (1990). The literature of direct writing assessment: Major concerns and prevailing trends. *Review of Educational Research. 60*, 237–63.

Hymes, D. H. (1972). On communicative competence. In J. B. Pride & J. Holmes (Eds.), Sociolinguistics. Penguin Books.

Kirschner, M., Wexler, C., Specto, E. (1992). Avoiding obstacles to student comprehension of test questions. *TESOL Quarterly, 26*, 537-556.

Kirschner, M., Wexler, C., Specto, E. (1996). A Teacher Education Workshop on the Construction of EFL Tests and Materials. *TESOL Quarterly, 30,* 85-111.

Kirkgöz, Y. (2008). Globalization and English Language Policy in Turkey. *Educational Policy, 23* (5), 663-684. https://doi: 10.1177/0895904808316319.

Köksal, D., Erten, İ. H., Zehir Topkaya, E., Yavuz, A., Yüksel, G., Aksu, İ. E. A., Şirin, E. (2006). English Course for Young Adults: Campus Life, Nobel Yayın Dağıtım.

Krashen, S. D. (1982). Principles and practice in second language acquisition. Pergamon Press.

Lado, R. (1964). Language testing: The construction and use of foreign language tests. McGraw-Hill.

Lan, C., & Fan, S. (2019). Developing classroom-based language assessment literacy for in-service EFL teachers: The gaps. *Studies in Educational Evaluation, 61*, 112–122. https://doi.org/10.1016/j.stueduc.2019.03.003

Lantolf, J., Frawley, W. (1985). Oral proficiency testing: a critical analysis. *Modern Language Journal 69*, 337–45.

Latif, M. W., & Wasim, A. (2022). Teacher beliefs, personal theories and conceptions of assessment literacy—a tertiary EFL perspective. *Language Testing in Asia, 12*(1). https://doi.org/10.1186/s40468-022-00158-5

Lewkowicz, J. (2000). Authenticity in language testing: Some outstanding questions. *Language Testing. 17*(1), 43-64.

Llosa, L. (2011). Standards-based classroom assessments of English proficiency: A review of issues, current developments, and future directions for research. *Language Testing. 28* (3), 367-382.

Lumley, T., McNamara, T. F. (1995). Rater characteristics and rater bias: implications for training. *Language Testing, 12*(1), 54–71.

Luoma, S. (2001). Test review. *Language Testing, 18*(2) 225–23. https://doi.org/10.1177/026553220101800207

Lynch, B. K., Davidson, F., Henning, G. (1988). Person dimensionality in language test validation. *Language Testing, 5*(2), 206–19.

Madsen, H. (1983). Techniques in testing. Oxford Pub.

Marzano, R. J. (2000). Transforming classroom grading. Association for Supervision and Curriculum Development.

McNamara, T.F. (1991). Test dimensionality: IRT analysis of an ESP listening test. *Language Testing, 8*(2), 139–59.

Mertler, C. A. (2004). Secondary teachers'assessment literacy: Does classroom experience make a difference?American Secondary Education,33(1),49-64.https://www.jstor.org/stable/41064623

Miles, M. B. and Huberman, M. A. (1994). An expanded sourcebook: Qualitative data analysis. Sage.

O'Loughlin, K. (2013). Developing the assessment literacy of university proficiency test users. *Language Testing, 30*(3), 363-380. https://doi.org/10.1177/0265532213480336.

Oller, J. W., Jr. (1976). Evidence for a general language proficiency factor. *DieNeuren Sprachen, 76*, 165–174.

Ölmezer-Öztürk, E., & Aydin, B. (2019). Investigating language assessment knowledge of efl teachers. *Hacettepe Egitim Dergisi, 34*(3), 602–620. https://doi.org/10.16986/HUJE.2018043465.

Pill, J. (2016). Drawing on indigenous criteria for more authentic assessment in a specific-purpose language test: Health professionals interacting with patients. *Language Testing, 33*(2), 175–193.

Pollitt, A. (1997). Rasch measurement in latent trait models. In Clapham, C. and Corson, D., editors, Encyclopedia of language and education. Volume 7: Language testing and assessment. Kluwer Academic, 243–54.

Read, J., Chapelle, C. A. (2001). A framework for second language vocabulary assessment. *Language Testing, 18*(1), 1-32.

Purpura, J. E. (1997). An analysis of the relationships between test takers' cognitive and metacognitive strategy use and second language test performance. *Language Learning, 47*, 289–325.

Richards, J. (2002). 30 Years of TEFL/TESL experience: A personal reflection. *RELC Journal, 33*, 1-35.

Sahlberg, P. (2006). Education reform for raising economic competitiveness. *Journal of Educational Change,7(*4), 259-287. https://doi.org/10.1007/S10833-005-4884-6.

Sariyildiz, G. (2018). Department of Foreign Language Education English Language Teaching A Study Into Language Assessment Literacy Of Preservice English As A Foreign Language Teachers In Turkish Context.

Sasaki, M. (1996). Second language proficiency, foreign language aptitude, and intelligence: quantitative and qualitative analyses. Peter Lang.

Shohamy, E. (2001). The power of tests. Longman.

Shohamy, E. (2020). The Power of Tests: A critical perspective on the uses of language tests (1st ed.). Routledge.

Shohamy, E., Donitsa-Schmidt, S., Ferman, I. (1997). Test impact revisited: washback effect over time. *Language Testing 13*(3), 298– 317.

Spolsky, B. (1978). Introduction: Linguists and language testers. In Spolsky, B. (ed.) Advances in language testing research: Approaches to language testing. Vol. 2. Washington, DC: Center for Applied Linguistics.

Spolsky, B. (2002). Prospects for the survival of the Navajo language. *Anthropology and Education Quarterly, 33*(2), 139-162.

Stansfield CW. Lecture (2008). Where we have been and where we should go. *Language Testing, 25*(3), 311-326. https://doi:10.1177/0265532208090155.

Şentuna, E. (2002). The interests of EFL instructors in Turkey regarding inset content. Unpublished master's thesis. Bilkent University, Ankara.

Terwilliger, J. (1998). Semantics, psychometrics, and assessment reform: a close look at 'authentic' assessments. *Educational Researcher, 26*(8), 24–27.

Tomak, B., Karaman, A. C. (2013). Mentoring in a professional development program for novice teachers at a state university in Turkey: a qualitative inquiry. *The International Journal of Research in Teacher Education, 4* (2), 1-13.

Ur, P. (1996). A course in language teaching: Practice and theory. CUP.

Vogt, K., Tsagari, D., & Spanoudis, G. (2020). What Do Teachers Think They Want? A Comparative Study of In-Service Language Teachers' Beliefs on LAL Training Needs. *Language Assessment Quarterly*, 386–409. https://doi.org/10.1080/15434303.2020.1781128.

Wall, D. (1996). Introducing new tests into traditional systems: insights from general education and from innovation theory. *Language Testing, 13*(3), 334–54.

Wall, D., Alderson, J. C. (1993). Examining washback: the Sri Lankan impact study. *Language Testing, 10*, 41–69.

Weigle, S. C. (1998). Using FACETS to model rater training effects. *Language Testing, 15*(2), 263–67.

Willis, D. (2003). Rules, patterns, and words. Cambridge University Press.

Wu, W. M., Stansfield, C. W. (2001). Towards authenticity of task in test development. Language Testing, 18(2), 187-206. American Psychological Association. (2010). Publication manual of the American Psychological Association (6th ed.). Washington, DC: American Psychological Association.

Yamtim, V., & Wongwanich, S. (2014). A Study of Classroom Assessment Literacy of Primary School Teachers. *Procedia Social and Behavioral Sciences, 116,* 2998–3004. https://doi.org/10.1016/j.sbspro.2014.01.696

Appendix

Bachman and Palmer's Test Development Stages (1996, p. 87)
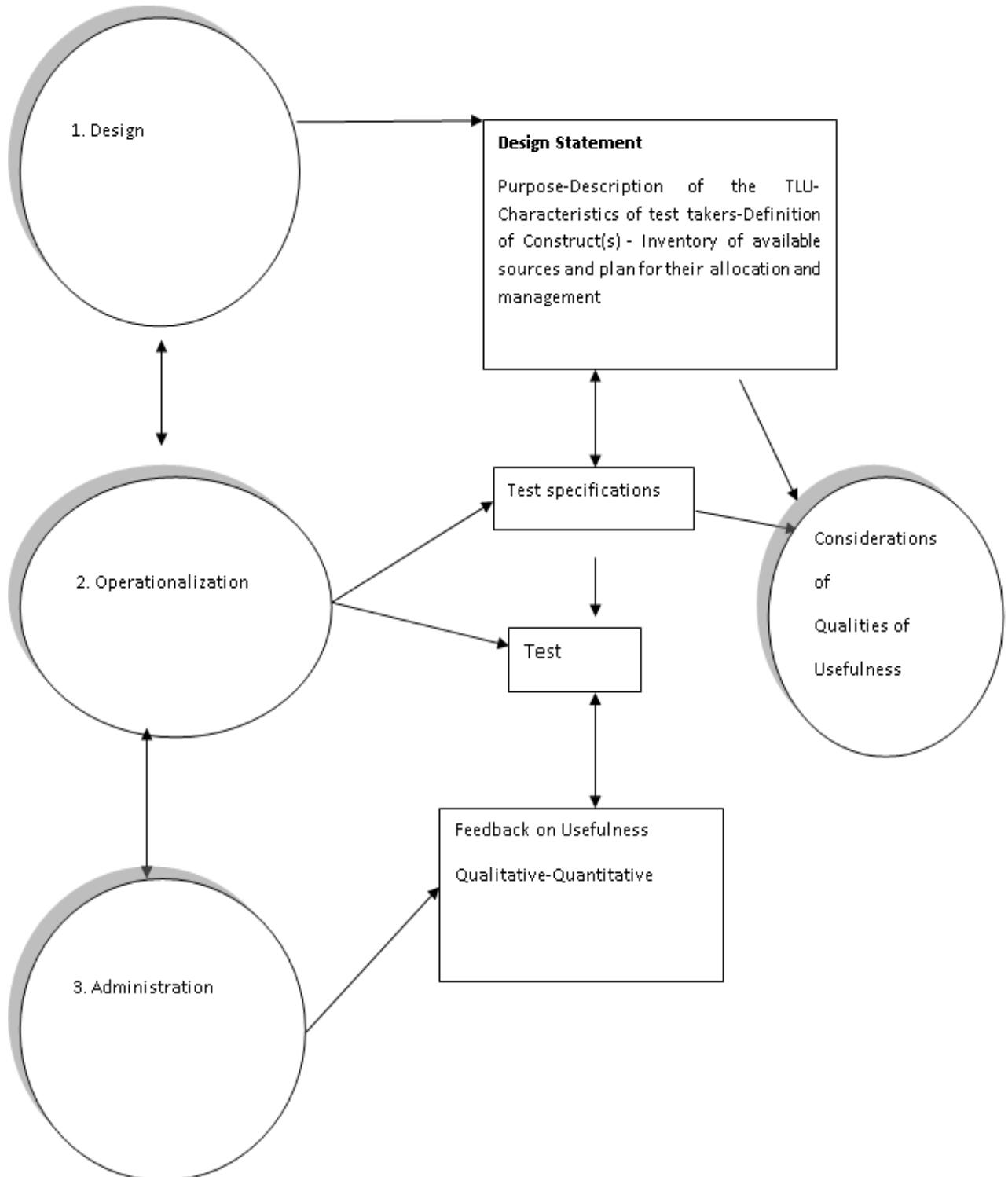
Autonomy Support and Motivation in Physical Education: A Comparison of Teacher and Student Perspectives

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Abstract

The aim of this study was to identify predictors of teachers' and students' motivation and autonomy support in physical education. Ninety-four physical education teachers (26 female, 68 male) and 2127 students (1093 boys, 1026 girls, and 8 no gender specified) from 56 (42 public, 14 private) high schools all voluntarily participated in the study. The students' perceived autonomy support, the intrinsic motivation for physical education, and the teachers' perceptions of their own autonomy support in lessons and their motivations to teach were assessed. Pearson correlation analysis showed no relationship between teachers' perceptions of autonomy support and the students' perceptions of autonomy support. Regression analysis showed that a) the students' perceptions of autonomy support were positive predictors of the students' intrinsic motivations, and b) the assessment support sub-dimension of autonomy support was a positive predictor of teachers' intrinsic motivations to teach physical education. Given these findings, it becomes critical that PE teachers learn about the value of autonomy support and how to provide it during pre-service and in-service teacher education.

Keywords: autonomy support, motivation, physical education, teacher and student perceptions

Introduction

The Self-Determination Theory (Deci and Ryan, 1985) presumes that everyone has an innate, natural tendency to enhance their sense of self, and that social environments can either support or interfere with these tendencies (Ryan and Deci, 2000). The definition of self-determination according to Deci and Ryan (2002) is when a person engages in an activity based on his or her own sense of choice rather than being directed to do so by external pressures, repression, or reward. The theory proposes that social contexts may either support or disrupt the growth and integration tendencies of the human soul and that all people have a natural, intrinsic, and constructive tendency to enhance their sense of self (Ryan and Deci, 2000).

The theory categorizes motivation into three forms: intrinsic motivation, extrinsic motivation, and amotivation (Deci and Ryan, 1985). The term intrinsic motivation refers to an individual's enjoyment of his or her actions, their desirability, and their pleasure in choosing to engage in such acts willingly (Ryan and Deci, 2000). Extrinsic motivation refers to outside factors that influence our behavior through rewards or incentives while simultaneously decreasing our biological demands (Plotnik, 2007). Last but not least, apathy is a person's refusal to perform a necessary task because they believe it to be worthless (Ryan and Deci, 2000).

Tessier, Sarrazin, and Ntoumains (2010) argued that the students for whom teachers provide autonomy support are more intrinsically motivated and have more positive emotions than the students for whom teachers are controlling. Teachers who enable students to recognize and develop their own personal goals and interests and allow them to choose provide high autonomy support to their students (Assor, Kaplan, and Roth, 2002). Moreover, such teachers also create classroom opportunities for students, making it easier for students to adapt to the learning environments, therefore, they help students participate in activities and become intrinsically motivated to learn (Reeve, Jang, Carrell, Jeon, and Barch, 2004). Studies have shown a link between the autonomy support that physical education (PE) teachers provide and their students' intrinsic motivation to participate in PE (Fin et al., 2019; Escriva-Boulley, Ntoumanis, and Tessier, 2018). The students' demand for autonomy is jeopardized, however, when teachers become controlling (Reeve et al., 2004). Controlling teachers tend to pressure students and use threats, rewards, and punishment to get them to perform (Reeve, 2002).

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According to teachers, students' intrinsic motivation increased in situations where they felt their teachers supported their autonomy (Kılınç, Bozkurt, and İlhan, 2018). Another study found that students' perceived support for autonomy rose with engagement in PE, which in turn enhanced their academic motivation. In other words, active involvement in PE acted as a mediator between the support of autonomy and academic motivation (Lozano-Jiménez et al., 2021). Additionally, students' intrinsic motivation, involvement in activities, academic success, and cognitive and skill development are all higher when PE teachers exhibit autonomy-supportive behaviors (Muftuler, 2016).

According to Oğuz (2013), there is a gap between teachers' awareness of the need for autonomy support and the actual autonomy support they give to their students. In a similar vein, Sert et al. (2012) found that students' perceptions of autonomy support in foreign language classrooms varied from teachers' perceived autonomy support. The students said that, in contrast to their teachers, they had not been given any encouragement to choose the contents of their portfolios and had not been permitted to do self-assessment. Smith et al. (2016) compared how the coaching environment supported autonomy as perceived by the coaches, as perceived by the athletes, and as observed by the independent observers. There was no relation between the reports of the observers and the perceptions of the athletes, coaches, or observers. The perceptions of the coaches and athletes' autonomy and support did, however, appear to be moderately positively correlated.

Teacher motivation was defined as the effort of teaching (Han and Yin, 2016). Teacher motivation positively affects teacher well-being, distress, and teacher autonomy support (Vansteenkiste et al., 2020; Slemp et al., 2020). It has been observed that teachers who use autonomy-supporting strategies have an increase in their motivation to teach (Nie et al., 2015; Aelterman et al., 2016).

Sinclair (2008) suggests that the teachers' motivation to teach and the students' motivation to learn develop together, parallel to each other. Furthermore, research has shown that teacher motivation has a direct impact on student motivation (Adamou, 2018; Engin, 2020; Cheon, Reeve, and Vansteenkiste, 2020). More specifically, the teacher's intrinsic motivation is one of the most important factors that can affect student motivation for the music lesson (Maulana et al., 2016), math lesson (Flunger et al., 2022), and foreign language lesson (Muñoz-Restrepo et al., 2020). Additionally, highly motivated teachers have a beneficial impact on their students' performances (Öqvist and Malmström, 2016) and active engagement in class (Kızıltepe, 2008). On the other hand, by utilizing various teaching methods (Gil-Arias et al., 2020) and interactive technology (Nagovitsyn et al., 2020) in PE, teachers might indirectly influence student motivation.

Although research assessing teacher and student motivations independently has been published in the literature, no studies comparing teacher and student motivation in PE have been identified. Furthermore, despite the fact that several studies have assessed students' and teachers' perceptions of autonomy support (Shen et al., 2009; Baard, Deci, and Ryan, 2002; Muftuler and İnce, 2015), and several studies have examined teachers' perceptions of autonomy support (Haerens et al., 2018; Baard, Deci, and Ryan, 2004; Lim and Wang, 2009), no studies have yet compared the two perspectives on autonomy support in PE. Consequently, the purpose of this study was to determine if PE teachers' motivation and perceptions of autonomy support were predictors of students' motivation and perceptions of autonomy support.

Method

Research Design
This research adopted a quantitative, correlational and cross-sectional design.

Sample and Data Collection
The sample of teachers and students was recruited after receiving approval from the Ethics Committee of a university and the Ministry of National Education. Ninety-four PE teachers (M_{Age}= 39,92; $M_{Teaching\ Experience}$=11-15 years) from 56 schools (42 public and 14 private) in a western city in Turkey were included in the study with a random sampling method. A sample of PE teachers' 9th, 10th, 11th and 12th grade classes were the students' universe. An appropriate sampling method was used to determine the students' sample, and 2127 high school students (1093 girls, 1026 boys, 8 no gender specified; M_{Age}= 15,46) were included in the study.

Table 1. Distribution of the Sample by Grade Level

Grade	9th grade	10th grade	11th grade	12th grade	Total
Total	951	592	436	148	2127

Two separate questionnaire packs were prepared, one each for the teachers and students, with questions aimed at collecting demographic data. The teacher questionnaire pack included the Learner Autonomy Support Scale and

Motivation to Teach Scale. The student questionnaire pack included the Situational Motivation Scale and the Perceived Autonomy Support Scale.

Learner Autonomy Support Scale
The Learner Autonomy Support Scale was used to assess the autonomy support that teachers think they provide to their students in PE. It was developed by Oğuz (2013) and comprises 16 items that are scored on a five-point Likert scale with responses "always, often, occasionally, seldom, never". The scale has three sub-scales, which are emotion and thought support, learning process support, and assessment support. Oğuz (2013) demonstrated that the results of the confirmatory factor analysis conducted for this scale showed that the scale provided good fit indexes (X^2 /sd = 2.93, GFI =.90, AGFI =.86, RMSEA =.077, SRMR =.052, CFI =.97), and internal consistency ($\alpha = 0.92$) was found to be sufficient (Nunnally, 1978). A sample item for the emotion and thought support subscale was "encouraging students to ask questions in the lessons." A sample item for the learning process support subscale was "helping students set learning goals". A sample item for the assessment support subscale was "to allow students to evaluate their own work."

Motivation to Teach Scale
The Motivation to Teach Scale was used to determine PE teachers' motivation to teach levels. This scale was developed by Hinkin (1995) and validated in Turkish by Kauffman, Yılmaz, and Duke (2011). The scale is scored on a 5-point Likert scale, with responses anchored by "strongly agree" and "strongly disagree. The scale has two sub-scales of intrinsic and extrinsic motivation and a total of 12 items. Yılmaz et al. (2011) demonstrated that the results of the confirmatory factor analysis conducted for this scale showed that the scale provided good fit indexes (X^2 = 136.086, *sd* = 44, RMSEA =.08, NFI =.92, CFI =.94, GFI =.94, AGFI =.89). A sample item for the intrinsic motivation subscale was that "*I can't imagine a more enjoyable professional life than teaching.*" A sample item for the extrinsic motivation subscale was that "*I chose teaching because I would be respected in society.*"

Situational Motivation Scale
The Situational Motivation Scale was used to determine students' motivation levels for PE. It was developed by Guay, Vallerand, and Blanchard (2000) and adapted to Turkish by Daşdan Ada, Aşçı, Kazak Çetinalp, and Altıparmak (2012). The scale comprises 16 items and four sub-scales: intrinsic motivation, identification regulation, external regulation, and amotivation. The scale items are scored on a 7-point Likert scale, from 1 ("strongly disagree") to 7 ("strongly agree"). Daştan Ada et al. (2012) demonstrated that the results of the confirmatory factor analysis conducted for this scale showed that the scale provided good fit indexes (RMSEA =.06, GFI =.92, AGFI =.89, NFI =.94; NNFI =.96, CFI =.97). A sample item for the intrinsic motivation subscale was that "*I attend the class because I think this class is interesting.*" A sample item for the identification regulation subscale was that "*I attend the class for my own good.*" A sample item for the external regulation subscale was that "*I attend the class because I have to do it.*" A sample item for the motivation subscale was that "*I attend the class, but I'm not sure it's a good thing to continue with this lesson.*"

Perceived Autonomy Support Scale for Exercise Settings
The Perceived Autonomy Support Scale for Exercise Settings was used in the PE lesson to determine the students' perceptions of the autonomy support provided by the teacher in PE. It was developed by Hagger, Chatzisarantis, Hein, Pihu, Soos, and Karsai (2007), and the validity and reliability of the Turkish version were tested by Muftuler (2016). The scale comprises 12 items and is scored on a 7-point Likert scale, with responses ranging from "completely agree" to "completely disagree". The Cronbach's alpha value of the questionnaire was found to be .96. Muftuler (2016) revealed that the confirmatory factor analysis provided the good fit indices (χ^2/sd = 2.33, p≤ .05, RMSEA =.076, CFI =.978; NFI =.963, SRMR =.035; GFI =.932). A sample item for this scale was that '*I feel that my PE teacher provides me with choices, options, and opportunities about whether to do active sports and/or vigorous exercise in my free time.*'

Prior to the start of the study, consent forms were given to the students and their parents and collected after approval from the university's ethical committee and the ministry of national education. While keeping the teachers out of the data collection setting, the questionnaire packets were given to students during regular PE classes. Over the course of four months, the questionnaire packets were collected. During a school day, data was collected from PE teachers during their break. Applying both packs to both students and teachers took around 30 minutes. It was made clear that participation was voluntary, that participants could withdraw from the study at any time, that the data would only be used for research purposes, and that the researchers would never share their responses with anyone else.

Analyzing Data
The univariate and multivariate outliers were first detected in the data sets obtained from both the teachers (n = 94) and students (n = 2127). The two teachers with univariate outlier data and the two teachers with multivariate

outlier data were excluded from the study. Accordingly, there are 90 teachers' data left in the data set. For each variable, the assumption of normality was tested based on skewness and kurtosis values, and a normal distribution of data was observed. Then, Cronbach alpha values for each scale or subscale were calculated for internal consistency (Table 2).

The students of the teachers who comprised the study's teacher sample group received their responses to questionnaires. A single mean score for that class was calculated for each variable using the data collected from these student questionnaires. As a result, a single mean score was calculated for each variable in the class that each PE teacher taught. The relationships between the research variables were then determined using Pearson correlation analysis. In order to find predictors of both students' perceptions of autonomy support and motivational regulation and PE teachers' motivational regulation and perceptions of autonomy support, a series of regression analyses were used.

Results and Discussion

The descriptive statistics and Cronbach's alpha values of all the subscales used in the study are presented in Table 2.

Table 2. Descriptive Statistics of Study Variables

Variables		M	Likert	*SD*	Skewness	Kurtosis	*α*
Teacher	Intrinsic Motivation	3.52	5	.73	-.539	.495	.69
	Extrinsic Motivation	2.85	5	.85	.246	-.300	.72
	Autonomy – Emotion & Thought	4.36	5	.45	-.572	-.099	.81
	Autonomy - Learning Process	3.86	5	.68	-.116	-.654	.78
	Autonomy – Assessment Support	4.01	5	.66	-.299	-.633	.77
Student	Intrinsic Motivation	5.29	7	.47	-.282	-.504	.82
	Identified Regulation	5.08	7	.54	.002	-.167	.80
	Extrinsic Motivation	3.71	7	.55	-.183	-.677	.74
	Amotivation	2.81	7	.56	.010	-.258	.79
	Perceived Autonomy Support	5.22	7	.64	.131	.500	.93

N=90

The skewness and kurtosis values of all subscales normally distributed. Cronbach's alpha values showed internal consistency of each subscale.

Table 3. Pearson Correlation Analysis among Variables

	1	2	3	4	5	6	7	8	9
1.Teacher Intrinsic Motivation	1								
2.Teacher Extrinsic Motivation	.626**	1							
3.Teacher Autonomy – Emotion & Thought	.207*	.040	1						
4. Teacher Autonomy – Learning Process	.248*	.121	.724**	1					
5. Teacher Autonomy- Assessment Support	.253*	.153	.648**	.706**	1				
6. Student Intrinsic Motivation	-.006	0.19	.032	.050	.087	1			
7. Student Identified regulation	-.005	-.023	.001	.051	.133	.838**	1		
8. Student Extrinsic Motivation	.101	.169	-.088	-.143	-.104	-.433**	-.415**	1	
9. Student Amotivation	.006	.174	-.101	-.205	-.130	-.434**	-.386**	.720**	1
10. Student Perceived Autonomy Support	.97	.036	.150	.142	.128	.494**	.458**	-.247*	-480**

*p<.05, **p<.01

The sub-dimensions of the autonomy support provided by teachers to their students were not significantly correlated with the autonomy support experienced by the students, according to the findings of the Pearson correlation analysis. Students' motivation to learn and teachers' motivation to teach did not significantly correlate with one another. Table 4 shows the predictors of high school students' and PE teachers' intrinsic motivation as determined by regression analysis.

Table 4. Predictors of Students' Intrinsic Motivation and Teachers' Intrinsic Motivation

	β	t	p	Durbin-Watson
Student Perceived Autonomy Support R=0.848, ΔR^2=.71, $F_{(2.87)}$ = 111.018, p = .00	.140	2.184	.03*	1.957
Teacher Autonomy - Assessment Support R=.253, ΔR^2=.05, $F_{(1.88)}$ = 6.019, p = .01	.253	2.453	.01**	2.293

*p<.05 ** p<.01

According to regression analysis, teachers' perceptions of supporting students' autonomy were a significant positive predictor of their intrinsic motivation to teach, whereas students' perceptions of autonomy support were a significant positive predictor of students' intrinsic motivation.

Conclusion

In the present study, the teachers' and their students' perceptions of autonomy support in PE were compared. The students claimed that they did not feel that this climate supported their autonomy, despite the fact that the teachers believed it did. 36 of the 56 schools where data was gathered lack a gym, so PE classes were held on the playground. In Turkey, teachers frequently let their students pick an activity and freely participate in it in the schoolyard, particularly during the second half of the lesson (Taşmektepligil et al., 2006). Teachers may have tended to display more controlling behaviors in the first half of the lesson to maintain the discipline of the lesson because they may have believed that by allowing students to pick the activity they would do, they were supporting their autonomy. This might also be explained by the fact that PE teachers often act in a controlling way in order to keep authority over the class and the lesson in a setting as big and open as the schoolyard, where a lesson could easily devolve into chaos. Conversely, teachers who promote students' autonomy help them learn by ensuring that their in-class activities and outside motivational resources are complementary (Diseth et al., 2018; Haerens et al., 2015). Similar to our finding, Sert et al. (2012) found that students believed they were not encouraged to choose the content of their language portfolios and that teachers did not allow their students to conduct self-assessment. This finding contrasts with the views of the teachers related to the autonomy support they provide for their students.

It was found that there was no significant relationship between the sub-dimensions of autonomy support provided by the teachers to their students and the autonomy support experienced by the students. This finding may also have an assessment tool-related explanation. A one-dimensional tool (the Perceived Autonomy Support Scale for Exercise Settings) was used to assess students' perceptions of autonomy support. Three sub-scales of a more comprehensive tool (the Learner Autonomy Support Scale) were used to assess teachers' perceptions of autonomy support. The lack of a significant relationship between teachers' and students' perceptions of autonomy support in the same PE context may be caused by the assessment tools' lack of sensitivity when assessing autonomy support.

It was found that students' perceived autonomy support was a highly significant positive predictor of their intrinsic motivation. In other words, students are more intrinsically motivated to participate in PE when their perceived autonomy support level is higher. Additionally, a relationship was found between students' intrinsic motivation and perceived autonomy support. According to Ushioda (2006), students who take full responsibility for their own actions find intrinsic motivation in autonomy-supportive learning environments, which helps them better manage the learning environment. To put it another way, students who are given the opportunity to manage their own learning may benefit more from the lesson by being given this responsibility. Additionally, students who get autonomy support in PE succeed in employing appropriate learning techniques and connecting their learning across contexts (Deci et al., 1991; Deci and Ryan, 2002). Further, students may enjoy class more and eventually experience an increase in intrinsic motivation if they are given meaningful options in PE and can independently vary their learning environment (Knowles et al., 2018; Yetim et al., 2014).

Our research revealed that providing assessment support, a component of the autonomy support teachers give, was a highly significant positive predictor of teachers' intrinsic motivation to teach. The assessment support sub-dimension focuses on how students perceive their ability to contribute to lesson-level assessment choices and evaluate their own work (Oğuz, 2013). The lesson is made more autonomy-supportive for the students by using

various methods to provide autonomy support during the assessment and evaluation process, including preparing student-centered assessment tools, using peer and self-assessment, and maintaining student portfolios as part of the assessment and evaluation process (Ergür, 2010; Stefenou et al., 2004). Since they add variety to their own teaching environments, teachers who provide students with more meaningful options by using alternative assessment tools and methods like these lessons more (Akdemir, 2020) may enhance their intrinsic motivation. Numerous studies have revealed that teaching new methods and techniques connected to autonomy support raises teachers' intrinsic motivation (Su & Reeve, 2011; Deci & Ryan, 2000; Su & Reeve, 2011; Deci & Ryan, 2000). This study adds evidence to the body of literature suggesting that teachers' intrinsic motivation to encourage student autonomy in the lesson is increasing.

Recommendations
Various school climates (Benson, 2010; Blömeke & Klein, 2013), varied cultures (Sheldon et al., 2001), and different geographic locations all have an impact on how autonomous students feel supported (Cross & Markus, 1999). The results of this study are therefore restricted to a public high school PE setting in Turkey. Due to the simultaneous assessment of exposure and outcome in this cross-sectional study, there is often no evidence of a temporal relationship between the two, which is the main limitation of this type of research (Carlson and Morrison, 2009). Therefore, more effective experimental designs that address these problems are required. Another limitation is the technique of assessment; future research might be designed to assess teachers' and students' perceptions of autonomy support through systematic observation tools rather than a self-report approach in order to get more objective results.

During PE teacher education programs, it is essential to raise pre-service PE teachers' awareness of the need to promote students' autonomy as well as their understanding of how to do so. Additionally, it is suggested that the Ministry of Education work with universities that provide PE teacher education programs to establish in-service education programs that include the best autonomy-supportive practices.

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Author (s) Contribution Rate
Arık: Conceptualization, design, analysis, writing, rate; %50. Erturan: Editing/reviewing, supervision, Rate; %50.

Conflicts of Interest
We have no conflicts of interest to disclose.

Ethical Approval

References
Aelterman, N., Vansteenkiste, M., Soenens, B., & Haerens, L. (2016). A dimensional and person-centered perspective on controlled reasons for non-participation in physical education. *Psychology of Sport and Exercise*, *23*, 142-154. https://doi.org/10.1016/j.psychsport.2015.12.001

Akdemir, E. (2020). The Determination of Teachers' Motivation Based on Herzberg's Motivation Theory. *Turkish Online Journal of Educational Technology-TOJET*, *19*(4), 89-101. https://eric.ed.gov/?id=EJ1272850

Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevance is excellent: Autonomy-enhancing and suppressing teacher behaviours predicting students' engagement in schoolwork. *British journal of educational psychology*, *72*(2), 261-278. https://doi.org/10.1348/000709902158883

Baard, P. P., Deci, E. L., & Ryan, R. M. (2004). Intrinsic need satisfaction: a motivational basis of performance and weil-being in two work settings. *Journal of Applied Social Psychology*, *34*(10), 2045-2068. **https://doi.org/10.1111/j.1559-1816.2004.tb02690.x**

Benson, P. (2010). Teacher education and teacher autonomy: Creating spaces for experimentation in secondary school English language teaching. *Language Teaching Research*, *14*(3), 259-275. https://doi.org/10.1177/1362168810365236

Blömeke, S., & Klein, P. (2013). When is a school environment perceived as supportive by beginning mathematics teachers? Effects of leadership, trust, autonomy and appraisal on teaching quality. *International Journal of Science and Mathematics Education*, 11(4), 1029-1048. https://doi.org/10.1007/s10763-013-9424-x

Carlson, M. D., & Morrison, R. S. (2009). Study design, precision, and validity in observational studies. *Journal of Palliative Medicine*, 12(1), 77-82. https://doi.org/10.1089/jpm.2008.9690

Cross, S. E., & Markus, H. R. (1999). The cultural constitution of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 378–396). Guilford Press. https://bit.ly/3dj1KUF

Daşdan, A. E. N., Aşçı, F. H., Kazak, Z Ç. F., & Altıparmak, M. E. (2012). Durumsal Güdülenme Ölçeği'nin (DGÖ) beden eğitimi ders ortamı için geçerlik ve güvenirliği.[The validity and reliability of the Situational Motivation Scale (SIS) for the physical education classroom environment.] *Spormetre Physical Education and Sport Sciences\ Spormetre Beden Eğitimi ve Spor Bilimleri Dergisi*, 10(1), 7-12. https://doi.org/10.1501/Sporm_0000000214

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, 19(2), 109-134. https://doi.org/10.1016/0092-6566(85)90023-6

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. A. Dienstbier (Ed.), *Nebraska Symposium on Motivation, 1990: Perspectives on motivation* (pp. 237–288). University of Nebraska Press. https://bit.ly/3xoCaEB

Deci, E. L., & Ryan R. M. (2000) The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry* 11(4): 227-268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., and Ryan R. M. (2002) *Handbook of self-determination research*. University Rochester Press. https://bit.ly/3DpnCsf

Deci, E. L., Vallerand R. J., Pelletier L. G., and Ryan R. M. (1991) Motivation and education: The self-determination perspective. *Educational psychologist* 26(3-4): 325-346. https://doi.org/10.1080/00461520.1991.9653137

Diseth, Å., Breidablik, H. J., & Meland, E. (2018). Longitudinal relations between perceived autonomy support and basic need satisfaction in two student cohorts. Educational Psychology, 38(1), 99-115. https://doi.org/10.1080/01443410.2017.1356448

Engin, G. (2020). An Examination of Primary School Students' Academic Achievements and Motivation in Terms of Parents' Attitudes, Teacher Motivation, Teacher Self-Efficacy and Leadership Approach. *International journal of progressive education*, 16(1), 257-276. https://bit.ly/3S0E06G

Escriva-Boulley, G., Tessier, D., Ntoumanis, N., & Sarrazin, P. (2018). Need-supportive professional development in elementary school physical education: Effects of a cluster-randomized control trial on teachers' motivating style and student physical activity. *Sport, Exercise, and Performance Psychology, 7*(2), 218–234. https://doi.org/10.1037/spy0000119

Ergür, D. O. (2010, November). Öğrenen özerkliğinin kazandırılmasında öğretmenin rolü. [The role of the teacher in gaining learner autonomy.] In *International Conference on New Trends in Education and Their Implications* (Vol. 354, p. 359). https://bit.ly/3QBvYzW

Fin, G., Moreno-Murcia, J. A., León, J., Baretta, E., & Júnior, R. J. N. (2019). Interpersonal autonomy support style and its consequences in physical education classes. *PloS one*, 14(5), e0216609.https://doi.org/10.1371/journal.pone.0216609

Flunger, B., Hollmann, L., Hornstra, L., & Murayama, K. (2022). It's more about a lesson than a domain: Lesson-specific autonomy support, motivation, and engagement in math and a second language. *Learning and Instruction*, 77, 101500. https://doi.org/10.1016/j.learninstruc.2021.101500

Gil-Arias, A., Harvey, S., García-Herreros, F., González-Víllora, S., Práxedes, A., & Moreno, A. (2021). Effect of a hybrid teaching games for understanding/sport education unit on elementary students' self-determined motivation in physical education. *European Physical Education Review*, 27(2), 366-383. https://doi.org/10.1016/j.learninstruc.2021.101500

Guay, F., Vallerand, R. J., and Blanchard, C. (2000) On the assessment of situational intrinsic and extrinsic motivation: The Situational Motivation Scale (SIMS). *Motivation and emotion* 24(3): 175-213. https://doi.org/10.1023/A:1005614228250

Haerens, L., Vansteenkiste, M., De Meester, A., Delrue, J., Tallir, I., Vande Broek, G., ... & Aelterman, N. (2018). Different combinations of perceived autonomy support and control: Identifying the most optimal motivating style. *Physical Education and Sport Pedagogy*, 23(1), 16-36. https://doi.org/10.1080/17408989.2017.1346070

Haerens, L., Aelterman, N., Vansteenkiste, M., Soenens, B., & Van Petegem, S. (2015). Do perceived autonomy-supportive and controlling teaching relate to physical education students' motivational experiences through unique pathways? Distinguishing between the bright and dark side of motivation. *Psychology of Sport and Exercise*, 16, 26-36. https://doi.org/10.1016/j.psychsport.2014.08.013

Hagger, M. S., Chatzisarantis, N. L., Hein, V., Pihu, M., Soos, I., & Karsai, I. (2007). The perceived autonomy support scale for exercise settings (PASSES): Development, validity, and cross-cultural invariance in young people. *Psychology of Sport and Exercise*, 8(5), 632-653. https://doi.org/10.1016/j.psychsport.2006.09.001

Han, J., & Yin, H. (2016). Teacher motivation: Definition, research development and implications for teachers. *Cogent education*, 3(1), 1217819. https://doi.org/10.1080/2331186X.2016.1217819

Hinkin, T. R. (1995). A review of scale development practices in the study of organizations. *Journal of management*, 21(5), 967-988. https://doi.org/10.1177/014920639502100509

Kauffman, D. F., Soylu, M. Y., & Bryan, D. U. K. E. (2011). Validation of the motivation to teach scale. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 40(40), 279-290

Kılınç, A. Ç., Bozkurt, E., & İlhan, H. (2018). Öğretmen özerkliğine ilişkin öğretmen görüşlerinin incelenmesi. [Examination of teachers' views on teacher autonomy.] *Eğitim ve İnsani Bilimler Dergisi: Teori ve Uygulama*, 9(18), 77-98. https://bit.ly/3xj1M5O

Kızıltepe, Z. (2008) Motivation and demotivation of university teachers. *Teachers and Teaching* 14(5-6): 515-530. https://doi.org/10.1080/13540600802571361

Knowles A, Wallhead T and Readdy T (2018) Exploring the synergy between Sport Education and in-school sport participation. Journal of Teaching in Physical Education 37(2): 113–122. https://doi.org/10.1123/jtpe.2017-0123

Lim, B. C., & Wang, C. J. (2009). Perceived autonomy support, behavioural regulations in physical education and physical activity intention. *Psychology of Sport and Exercise*, 10(1), 52-60. https://doi.org/10.1016/j.psychsport.2008.06.003

Lozano-Jiménez, J. E., Huéscar, E., & Moreno-Murcia, J. A. (2021). Effects of an autonomy support intervention on the involvement of higher education students. *Sustainability*, 13(9), 5006. https://doi.org/10.3390/su13095006

Maulana, R., Opdenakker, M. C., & Bosker, R. (2016). Teachers' instructional behaviors as important predictors of academic motivation: Changes and links across the school year. Learning and Individual Differences, 50, 147-156. https://bit.ly/3db00gn

Muftuler, M. (2016). Perceived Autonomy Support Scale for Exercise Settings: Validity and reliability study for Turkish Egzersizde Algılanan Özerklik Desteği Ölçeği: Türkçe geçerlik ve güvenirlik çalışması. *Journal of Human Sciences*, 13(1), 2158-2169. https://bit.ly/3BE95Ye

MuftulerM, M., & İnce, M. L. (2015). Use of trans-contextual model-based physical activity course in developing leisure-time physical activity behavior of university students. *Perceptual and Motor Skills*, 121(1), 31-55. https://bit.ly/3QWFI8h

Muñoz-Restrepo, A., Ramirez, M., & Gaviria, S. (2020). Strategies to enhance or maintain motivation in learning a foreign language. *Profile Issues in Teachers Professional Development*, 22(1), 175-188. https://doi.org/10.15446/profile.v22n1.73733

Nagovitsyn, R. S., Vaganova, O. I., Kutepov, M. M., Martyanova, L. N., Kosenovich, O. V., Moeseev, Y. V., ... & Osipov, A. Y. (2020). Interactive technologies in developing student's motivation in physical education and sport. *International Journal of Applied Exercise Physiology*, 9(6), 72-79. https://bit.ly/3BeK9oX

Nie, Y., Chua, B. L., Yeung, A. S., Ryan, R. M., & Chan, W. Y. (2015). The importance of autonomy support and the mediating role of work motivation for well-being: Testing self-determination theory in a Chinese work organisation. *International Journal of Psychology*, 50(4), 245-255. https://doi.org/10.1002/ijop.12110

Nunnally, J. C. (1978). An overview of psychological measurement. *Clinical diagnosis of mental disorders*, 97-146. DOI: 10.1007/978-1-4684-2490-4_4

Oğuz, A. (2013). Teacher's views about supporting learner autonomy Öğretmenlerin öğrenen özerkliğinin desteklenmesine ilişkin görüşleri. *Journal of Human Sciences*, 10(1), 1273-1297. https://bit.ly/3Bh1AW0

Öqvist, A., & Malmström, M. (2016). Teachers' leadership: A maker or a breaker of students' educational motivation. *School Leadership & Management*, 36(4), 365-380. https://doi.org/10.1080/13632434.2016.1247039

Plotnick, R. D. (2007). Adolescent expectations and desires about marriage and parenthood. *Journal of adolescence*, 30(6), 943-963. https://doi.org/10.1080/13632434.2016.1247039

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68. https://doi.org/10.1037/0003-066X.55.1.68

Reeve, J. (2002). Self-determination theory applied to educational settings. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 183–203). University of Rochester Press. https://bit.ly/3dbouWN

Reeve J, Bolt E and Cai Y (1999) Autonomy-supportive teachers: How they teach and motivate students. *Journal of Educational Psychology*, 91(3): 537. https://doi.org/10.1037/0022-0663.91.3.537

Reeve J, Jang H, Carrell D, Jeon S and Barch J (2004) Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and emotion* 28(2): 147-169. https://doi.org/10.1023/B:MOEM.0000032312.95499.6f

Sert, N., Adamson, J., & Büyüköztürk, Ş. (2012). Autonomy and European Language Portfolio Use among Turkish Adolescents Türk Ergenlerde Özerklik ve Avrupa Dil Gelişim Dosyası Kullanımı. *Education*, 37(166). https://bit.ly/3QMoQRk

Sheldon, K. M., Elliot, A.J., Kim, Y. ve Kasser, T. (2001). What is satisfying about satisfying events? Testing 10 candidate psychological needs. *Journal of Personality and Social Psychology*, 80, 325-33. https://doi.org/10.1037/0022-3514.80.2.325

Shen, B., McCaughtry, N., Martin, J., & Fahlman, M. (2009). Effects of teacher autonomy support and students' autonomous motivation on learning in physical education. *Research Quarterly for Exercise and Sport*, 80(1), 44-53. DOI: 10.1080/02701367.2009.10599528

Shen, B. (2010). How can perceived autonomy support influence enrollment in elective physical education? A prospective study. *Research quarterly for exercise and sport*, 81(4), 456-465. DOI: 10.1080/02701367.2010.10599706

Shen, B., McCaughtry, N., Martin, J., Garn, A., Kulik, N., & Fahlman, M. (2015). The relationship between teacher burnout and student motivation. *British Journal of Educational Psychology*, 85(4), 519-532. **https://doi.org/10.1111/bjep.12089**

Sinclair C (2008) Initial and changing student teacher motivation and commitment to teaching. *Asia-Pacific Journal of Teacher Education* 36(2): 79-104. https://doi.org/10.1080/13598660801971658

Slemp, G. R., Field, J. G., & Cho, A. S. (2020). A meta-analysis of autonomous and controlled forms of teacher motivation. *Journal of Vocational Behavior*, 121, 103459. https://doi.org/10.1016/j.jvb.2020.103459

Smith, N., Tessier, D., Tzioumakis, Y., Fabra, P., Quested, E., Appleton, P., ... & Duda, J. L. (2016). The relationship between observed and perceived assessments of the coach-created motivational environment and links to athlete motivation. *Psychology of Sport and Exercise*, 23, 51-63. https://doi.org/10.1016/j.psychsport.2015.11.001

Stefanou, C. R., Perencevich, K. C., DiCintio, M., & Turner, J. C. (2004). Supporting autonomy in the classroom: Ways teachers encourage student decision making and ownership. *Educational psychologist*, 39(2), 97-110. https://doi.org/10.1207/s15326985ep3902_2

Su, Y. L., & Reeve, J. (2011). A meta-analysis of the effectiveness of intervention programs designed to support autonomy. *Educational psychology review*, 23(1), 159-188. https://bit.ly/3daIKrE

Taşmektepligil, Y., Yilmaz, Ç., İmamoğlu, O., & Kılcıgil E. (2006). İlköğretim okullarinda beden eğitimi ders hedeflerinin gerçekleşme düzeyi. *Spormetre Beden Eğitimi ve Spor Bilimleri Dergisi*, 4(4), 139-147. https://doi.org/10.1501/Sporm_0000000070

Tessier D, Sarrazin P and Ntoumanis N (2010) The effect of an intervention to improve newly qualified teachers' interpersonal style, students motivation and psychological need satisfaction in sport-based physical education. *Contemporary Educational Psychology* 35(4): 242-253. https://doi.org/10.1016/j.cedpsych.2010.05.005

Ushioda, E. (2006). Language motivation in a reconfigured Europe: Access, identity, autonomy. *Journal of multilingual and multicultural development*, 27(2), 148-161. https://doi.org/10.1080/01434630608668545

Yetim, E., Demir, Y., & Erturan, İ. G. (2014). Beden eğitimi derslerinde motivasyon: tutum ve motivasyonel sratejilerin tahmin edici etkisi. *SPORMETRE Beden Eğitimi ve Spor Bilimleri Dergisi*, 12(2), 139-146. https://doi.org/10.1501/Sporm_0000000262

Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. *Motivation and emotion*, 44(1), 1-31. https://doi.org/10.1007/s11031-019-09818-1

Turkish Adaptation of Principal-Teacher Relationship Scale: Validity and Reliability Study

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> *Becoming a leader begins with being able to lead yourself*
> *(Lider olabilmek, kendi liderliğini yapabilmekle başlar)*
> Muhammet İbrahim Akyürek

Abstract

In the study, the Principal-Teacher Relationship Scale, originally created by Zee, Roorda, and Hanna (2023), was subjected to an adaptation study for Turkish culture. In line with this aim, data for the study were gathered from 389 teachers working in primary and secondary schools located in the districts of Konya, Turkey. The Principal-Teacher Relationship Scale (PTRS) was used as the data collection tool in the study. The PTRS is a two-dimensional scale consisting of a total of 10 items. As part of the adaptation of the PTRS into Turkish, permission for scale usage was initially obtained. Subsequently, the process of establishing the Turkish language equivalent of the PTRS was initiated. After completing this process, data for the study were collected and analyses were conducted. Within the framework of data analysis, the validity and reliability of the PTRS were tested. Confirmatory factor analysis was used to evaluate the validity of the PTRS's two-dimensional structure. The reliability of the PTRS was evaluated using Cronbach's alpha coefficient. Based on the validity and reliability analyses, it was concluded that PTRS is suitable for use in Turkish culture and is a valid and reliable data collection tool.

Keywords: Principal-teacher relationship scale, Validity, Reliability

Introduction

Principal-teacher interaction or relationship is an emotionally important bond that is crucial for schools to run smoothly and the education of students. This interaction or relationship can form the basis of cooperation between management and teaching at school and contribute to the academic achievement of pupils and the general development of teachers. According to Price & Moolenaar (2015), providing and ensuring the continuation of an effective learning environment has long been recognized as a crucial responsibility for education leaders. This has been seen as an important tool to enhance students' learning and achievement levels (Price & Moolenaar, 2015).

Principal behaviors and school climate are the most influential factors that affect the success of teachers and the institution (Tschannen-Moran & Gareis, 2015). Schools are institutions where the emphasis is on human resources and human relations and interactions, and the school climate is a distinctive factor that impacts the relationship between principals and teachers within the school (Güzelgörür et al., 2021). The interactions and relationships between principals and teachers have a crucial impact on molding the school climate (Latsch, 2017). School principals with a positive school climate are educational leaders who have a relationship with their teachers based on respect and love, are open to communication, listen and understand the other person, empathize, act fairly, and do not discriminate (Gök & Tarayan, 2023). An effective school climate is characterized by traits such as trust, respect, moral values, opportunities for participation, academic and social development, commitment, innovation, and interest (Kelly, Thornton, & Daugherty, 2005). Educators and researchers possess a shared comprehension of the concept of school climate and acknowledge the significance of fostering a positive school climate in order to enhance school effectiveness (Downs, 2018). The importance of social interactions between school principals and teachers in establishing such learning environments is highlighted by current developments in educational leadership and management (Price & Moolenaar, 2015).

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Effective school leadership has a direct and indirect impact on the environment of the school as well as the performance of teachers and students. The main characteristics of school principals under the theme of leadership are seen as valuing equality and justice, being closely involved with their teachers and establishing good relationships, being consistent and stable, being understanding and empathetic, being a guiding leader, being sensitive to problems, and knowing how to build effective relationships with their teachers (Helvacı & Aydoğan, 2011). As stated by Dinger (2018), communication is a crucial component of effective school leadership and has been defined by Katz and Kahn (1978) as the essence of a social system or organization. Teachers' perceptions of their leaders are positively influenced by actions such as giving importance to their leaders' needs and encouraging collaboration (Allen, 2015). Hulsbos, Evers, and Kessels (2016) state that it is important to develop communication and involve teachers in the decision-making process in order to expand the power of the interaction or relationship between teachers and administrators. The healthy communication of principals with their teachers will help teachers feel valued, increase their commitment to their work, and contribute to the general cooperation in the school. Additionally, principal-teacher communication and relationships are crucial for success within the school. Effective communication allows school management to respond to the needs of teachers and foster the collaboration necessary to achieve the school's goals.

Good communication also strengthens the relationship of trust between the principal and the teacher. Many effective relationships are built on trust (McLeary & Cruise, 2012). Principal-teacher interaction or relationship is based on trust. One of the methods that principals can adopt in manage the development of the school is to establish supportive and trusting relationships with teachers (Price, 2012). This relationship of trust is very important to the success of the school. Trust and communication elements affect the behavior of teachers and administrators and help the formation of good and lasting relationships (Downs, 2018). When principals support their teachers and provide them with opportunities, it helps teachers develop themselves and serve their students better. Likewise, teachers' support for their principals provides the necessary cooperation for the school to achieve its goals.

Principals' trust in their teachers is formed when they believe that they can do their jobs well and that they will make the necessary effort for students to be successful. Additionally, Brezicha, Bergmark, and Mitra (2014) mention that principals need to create a supportive, collaborative, and fair environment that fosters trust and a sense of security among teachers. A safe environment enables teachers to feel comfortable and freely express their thoughts. Similarly, Teachers' trust in their principals is formed when they believe that they will keep their promises, such as reducing the workload of teachers and working for the success of students. However, while emphasizing the importance of trust in effective teacher-principal relationships, Tschannen-Moran and Gareis (2015) also highlight the reality that trust is not easily established or sustained in such relationships.

The relationship between principals and teachers may also encounter conflicts from time to time. Conflict management has been a topic that people frequently encounter in working life around the world in the 21st century (Kanyip, Ezeh, & Chioma, 2023). Boucher (2013) acknowledges that conflicts are a natural occurrence and are considered a normal condition by Schein (2010). As stated by Schein (2010), conflicts always exist to some degree. Conflict management refers to taking a series of measures to control or regulate conflicts (Kanyip, Ezeh, & Chioma, 2023). Particularly, disagreements arising from different thinking styles, a lack of collaboration, or workload issues can negatively impact the relationship.

Conflicts and disagreements are not only unavoidable but also essential for successful change. Effectively handling conflicts between parties relies on both sides comprehending the intentions of the opposing party (Caldwell & Byers, 1988). Since conflict is a situation that cannot be evaluated as completely good or bad, it is crucial to handle it skillfully and address it constructively (Weitten, Yost-Hammer, & Dunn, 2016).

Conflicts between principals and teachers can significantly affect teacher performance. It is stated that unethical behavior and a lack of trust from principals will not have a positive impact on teachers' attitudes, performance, and commitment to the school (Yukl, 2012). One method to improve the standard of instruction is to enhance teachers' pedagogical competencies (Aimah et al., 2017). The performance of the principal is one of the factors that influence the pedagogical competence of teachers, and therefore, effective interpersonal communication and conflict management are important (Amini, Hariri, & Rini, 2022). Exactly. The existence of such conflicts can make it difficult for teachers to focus on their work and fulfill their duties, which can ultimately lower their performance. This conflicting situation can also affect teachers' motivation. Teachers rely on the support of their principals, and when they do not receive the support they need, their motivation can decrease.

Principal-teacher conflicts can also significantly affect the achievement of school goals. School goals are important factors that determine the success of students in their education and the position of the school in society. However, Nnamara (2005) points out that factors such as teachers' non-compliance with the school principal's directives, the principal's neglect of teachers' well-being, a lack of professional development, inadequate communication, and the undisciplined behavior of teachers may prevent the school from achieving its goals. Similarly, Tschannen-Moran (2012) has also emphasized that mistrust towards principals leads to communication problems, teachers' lack of commitment to school goals, a lack of trust in decision-making processes, and conflicts arising from distrust and lack of trust.

Boucher (2013) states that instead of eliminating conflict, the task of an effective leader is to manage conflict effectively. There is no single most effective management style for conflict management, so both principals and teachers should be prepared to embrace conflict resolution techniques that are appropriate for different situations. Therefore, school administrators should involve everyone in decision-making and school management and effectively collaborate to manage conflicts (Kanyip, Eze, & Chioma, 2023). This will help teachers feel valued, increase their commitment to their work, and contribute to overall collaboration within the school.

In recent years, there has been an increased interest in social relationships among educators; however, not enough attention has been given to the relationships between administrators and teachers (Barnett & McCormick, 2004). School principals primarily assume the role of creating a climate within their institutions (Louis, Mayrowetz, Murphy, & Smylie, 2009). The relationships between principals and teachers affect the satisfaction, harmony, and commitment levels of both principals and teachers (Price, 2012). Collaboration, trust, communication, support for students, coherence, and the presence of organizational structure are among the factors that influence teachers' professional learning in schools (Li, Hallinger, & Ko, 2016). In this context, the significance of principal-teacher interaction and relationship can have an impact on teachers' professional development, students' learning experiences, overall school management, and community relations.

When reviewing the literature, it is evident that the principal-teacher interaction or relationship is a significant factor that directly influences the success of educational institutions, making it a relevant and timeless topic that requires attention. This relationship directly affects elements such as communication, collaboration, and motivation within the institution, thereby exerting a significant impact on the quality of students' education. Therefore, the nature of this relationship and its effective management are vital for the success of educational institutions. Furthermore, conducting research on the principal-teacher relationship and analyzing its results is an important step towards improving educational systems. Such research can contribute to mutual understanding between teachers and principals, the establishment of shared expectations, and the creation of a harmonious working environment. As a result, the quality of education in institutions can be enhanced through increased collaboration, coordination, and the development of students' abilities and progress.

The history of studies on principal-teacher relationships in international literature dates back 40-45 years (Andrew, Parks, & Nelson, 1985; Bhella, 1982; Blase & Blase, 1994; Halawah, 2005; Hunter-Boykin & Evans, 1995). In Turkey, however, the studies have a more recent history. In the national literature, indirect studies on principal-teacher relationships can be traced back 25-30 years (Akgün, Çıldız, & Çelik, 2009; Cemaloğlu & Kılınç, 2012; Türnüklü, Şahin, & Öztürk, 2002; Yıldız, 1996; Yılmaz, 2006). The topic of the principal-teacher relationship has been predominantly studied in the form of literature reviews and research based on the perspectives of teachers working at different school levels in both international and national literature. Furthermore, the principal-teacher relationship scale has not been used as a data collection tool in Turkey for scale development, adaptation, or independent quantitative or mixed-method studies. This suggests that the principal-teacher relationship has not been directly examined using a scale specifically designed for this purpose. Additionally, this may be attributed to a lack of awareness among educational science and management experts about the principal-teacher relationship scale or a lack of comprehensive research on the subject matter. The current research, being an adaptation study, can contribute to the field by offering a different perspective from the existing literature. In this context, the rationale of the study is to test the validity and reliability of the principal-teacher relationship scale in Turkish culture and adapt the scale into Turkish. Adapting the principal-teacher relationship scale into Turkish can provide valuable insights for researchers investigating the topic and contribute to their data collection processes. Therefore, the aim of the research is to adapt the principal-teacher relationship scale, originally developed by Zee, Roorda, and Hanna in 2023, to Turkish culture. In pursuit of this aim, the following research questions were addressed:

1. Is the Principal-Teacher Relationship Scale a valid measurement tool in Turkish culture?
2. Is the Principal-Teacher Relationship Scale a reliable measurement tool in Turkish culture?

Method

In this study, a quantitative methodology was employed to evaluate the reliability and validity of the Turkish version of the Principal-Teacher Relationship Scale (PTRS), which was originally developed by Zee, Roorda, and Hanna (2023). The study utilized a survey model, and quantitative techniques were employed to analyze the collected data.

Participants

The population of the study consists of 9701 teachers working in primary and secondary schools in the districts (Karatay, Meram, and Selçuklu) located in the city center of Konya in Turkey (Ministry of National Education [MNE], 2023). The study requires a minimum sample size of 370, as indicated by the lower limit of the 95% confidence interval (Gürbüz & Şahin, 2014). The sample of the study consists of 389 teachers working in

primary and secondary schools in the districts located in the city center of Konya in the 2022-2023 academic year. The 95% confidence interval indicates that the number of samples used in this study is adequate for the population (Gürbüz & Şahin, 2014). Simple random sampling was implemented to select the teachers for the sample. Randomness refers to the situation in which the units based on the sampling are equally likely to be selected for the sample (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2012).

Of the participants, 236 are female (60.7%) and 153 are male (39.3%). Among them, 145 are primary school teachers (37.3%) and 244 are middle school teachers (62.7%). In terms of teaching experience, 35 participants have 1-5 years of experience (9%), 103 have 6-10 years (26.5%), 88 have 11-15 years (22.6%), and 163 have 16 years or more (41.9%). Regarding their tenure at their current schools, 145 have been serving for 1-3 years (37.3%), 100 for 4-6 years (25.7%), 76 for 7-9 years (19.5%), and 68 for 10 years or more (17.5%).

Upon examining the data, it can be noticed that the majority of participants are female teachers who work in middle schools, have 16 years or more of professional seniority, and have been serving in their current schools for 1-3 years.

Data Collection Tool

In this study, the PTRS (Principal-Teacher Relationship Scale) developed by Zee, Roorda, and Hanna (2023) was used as the data collection tool. PTRS is a 10-item, five-point Likert scale questionnaire with two dimensions. The dimensions of the scale are closeness (5 items) and conflict (5 items). During the development process of PTRS, data were collected from a sample of 630 participants, consisting of primary and middle school teachers. The Cronbach's alpha coefficient for PTRS was found to be .96 for the closeness dimension and .93 for the conflict dimension. The item load values of the 10 items in the PTRS range between .69 and .93. A confirmatory factor analysis (CFA) was performed to test the validity of the PTRS. As a result of CFA, the two-dimensional structure of PTRS was confirmed (X2/sd= 1.75, RMSEA= .03, TLI/NNFI= .98 ve CFI= .99).

Language Equivalence Study

In order to collect data for the study, the Turkish Draft Form of PTRS (PTRS-TDF) was used. Adaptation permission was obtained from Zee, Roorda, and Hanna, who first developed the PTRS during the preparation process. With the permission obtained, the language equivalence process of PTRS was initiated. For this purpose, support was obtained from four English language experts and two Turkish language experts who are proficient in both languages. The items in the PTRS were translated into Turkish by the first English-language expert. The translated TDF was then retranslated into English by the second English language expert. Subsequently, the original and retranslated English scale forms were reviewed by the third and fourth English language experts to check for any loss of meaning, and they reached a consensus that there was no loss of meaning in the scale. The final TDF of the scale was checked by two Turkish experts in terms of intelligibility and expression, and in line with the feedback received, the original meanings of the scale items were preserved. After these procedures, the most suitable expressions in the Turkish language were determined, and the final draft form was created. The PTRS-TDF, in its final version, was presented to 20 teachers for their opinions, and based on the feedback received, further adjustments were made to the scale items while preserving their original meanings. Through the entire process and procedures, considering linguistic and idiomatic aspects, the Turkish version of PTRS was created.

Procedures and Data Analysis

The measurement tool used in the study was applied in the 2022–2023 academic year. As a consequence of the studies conducted regarding language equivalence, the pilot implementation phase of the PTRS-TDF was initiated. On average, participants took 10 minutes to complete the scale.

In the digitally encoded data, erroneous entries were first checked and manually corrected. Then, missing data analysis was conducted, and the approximate value assignment method was used. The literature was reviewed to assess the adequacy of the sample size for validity and reliability analyses (Kline, 2013; Tabachnick & Fidel, 2012). According to the literature, it was decided that the sample of 389 participants was suitable for conducting validity and reliability analyses.

As part of the data analysis, the fulfillment of the assumption of normality in the data set was examined. In this regard, the standard deviation, skewness, and kurtosis coefficients, as well as the mean, median, and mode values, were examined. The calculated standard deviation, skewness, and kurtosis values, respectively, were .85, -.77, .44 in PTRS; .94, -1.01, .84 in proximity dimension; conflict dimension is .89, -.45, .08. The skewness and kurtosis values in the study are between ±2. The interpretation of these findings suggests that the dataset follows a normal distribution (George & Mallery, 2010). Furthermore, the calculated mean, median, and mode values are as follows: for the overall PTRS, 3.61, 3.80, 3.80; for the proximity dimension, 3.81, 4.00, 4.00; and for the conflict dimension, 3.41, 3.60, 3.60, respectively. The proximity of the mean, median, and mode values in the study indicates that the data set follows a normal distribution (Hair, Ringle, & Sarstedt, 2011). In this context, the AMOS 22 software package was used for validity analysis, and confirmatory factor analysis was conducted

to test the validity (Jöreskog & Sörbom, 2006). Cronbach's alpha internal consistency coefficient and Item-total correlation techniques were used for the reliability analysis as the data set fulfilled the normality assumption (Gravetter & Walnau, 2000).

Findings

There are various methodologies regarding the required sample size for analysis in scaled development or adaptation processes. Different sources have emphasized that the sample size should be either 10 times the number of items (Nunnally, 1978) or 4 times the number of items (MacCallum et al., 2001). Furthermore, Comrey and Lee (1992), Tabachnick and Fidell (2012), and DeVellis (2014) have described sample sizes of 200 participants as "moderate," 300 participants as "good," 500 participants as "very good," and 1000 or more participants as "excellent." The generally accepted approach is that the sample size should be at least five times the number of items (Büyüköztürk et al., 2012; Tavşancıl, 2014). Therefore, the fact that this study was conducted with 389 teachers can be interpreted as reaching a sufficient number for statistical analysis.

Findings Regarding the Validity of the PTRS
The instrument, which aims to measure the level of the principal-teacher relationship and consists of 10 items, was developed based on two theoretical dimensions: closeness and conflict. The scale was prepared in a five-point Likert format. The rating range of the PTRS is as follows: strongly disagree (1.00-1.79), disagree (1.80-2.59), neither agree nor disagree (2.60-3.39), agree (3.40-4.19), strongly agree (4.20-5.00). In the context of the validity analysis of the PTRS, a confirmatory factor analysis was conducted to confirm the factor design of the tool.

According to the results of confirmatory factor analysis, the t-values for explaining the observed variables by latent variables were found to be significant at the .01 level. In terms of parameter estimates, t-values exceeding 1.96 are significant at the .05 level, and t-values exceeding 2.56 are significant at the .01 level (Çokluk, Şekercioğlu, & Büyüköztürk, 2014). Additionally, it was determined that the error variances of the observed variables are normally distributed (Çokluk et al., 2014). Due to the substantial t-values that were obtained for all items, all indicators have been incorporated into the model. The path diagram obtained from the confirmatory factor analysis is presented in Figure 1.
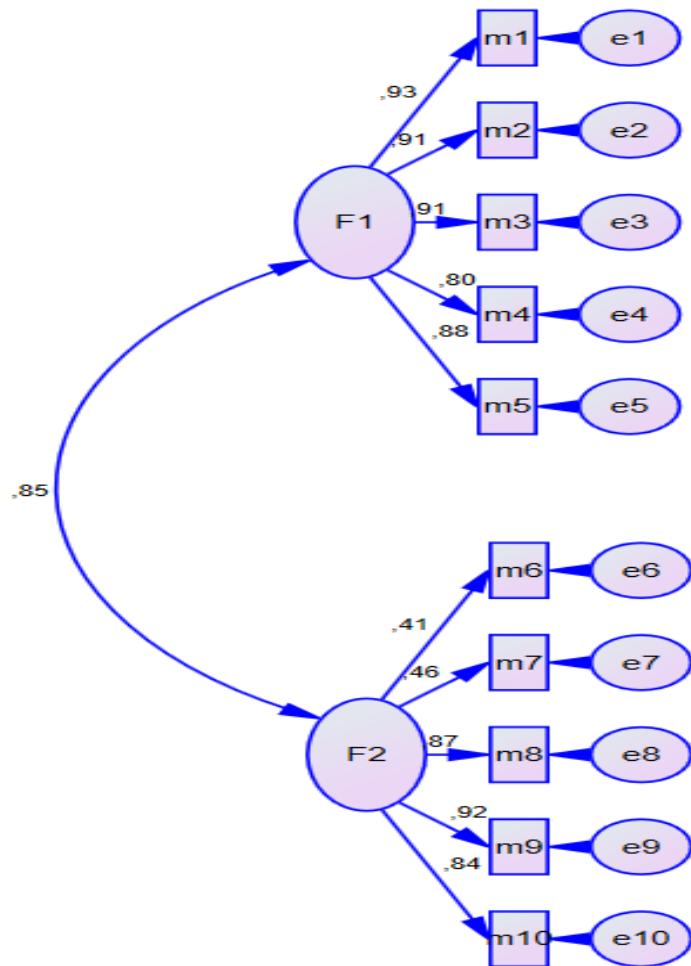
Figure 1. Path diagram of the principal-teacher relationship scale

The results of the confirmatory factor analysis of the PTRS are presented in Table 1.

Table 1. The results of the confirmatory factor analysis of the principal-teacher relationship scale

Compliance measurements	Measurement value	Reference range
p	.00	$< .01$
X^2/sd	2.16	≤ 3
RMSEA	.05	$\leq .05$
SRMR	.02	$\leq .05$
GFI	.97	$\geq .95$
TLI/NNFI	.98	$\geq .95$
CFI	.99	$\geq .95$

Based on the findings presented in Table 1, the p-value is statistically significant at the .01 level. It is common in many confirmatory factor analyses to observe significant p-values, which can be attributed to the large sample size (Çokluk et al., 2014). Therefore, alternative fit indices regarding the fit between the two matrices have been evaluated. The analysis results indicate that the X^2/sd, RMSEA, SRMR, GFI, TLI/NNFI, and CFI values exhibit excellent fit (Çokluk et al., 2014). Based on the analysis values, the two-factor structure of PTRS, consisting of 10 items (with 5 items each for the proximity and conflict factors), has been confirmed as a valid model.

Findings Regarding the Reliability of the PTRS
Reliability analyses were conducted by examining item analysis using item-total correlations and Cronbach's alpha to assess the reliability of the scale. The reliability analysis results for MÖİÖ are presented in Table 2.

Table 2. Reliability Analysis Results of Principal-Teacher Relationship Scale

Dimensions	Alpha value	Item-total correlation
Closeness	.95	.78-.89
Conflict	.82	.39-.78
Principal-teacher relationship scale	.92	.35-.84

According to Table 2, the internal consistency coefficient (Cronbach's alpha) values are .92 in the PTRS, .95 in the proximity dimension, and .82 in the conflict dimension. In this context, it can be stated that the internal consistency coefficient in the general and dimensions of the PTRS is sufficient for the reliability of the scale scores. A reliability coefficient of .70 and above is considered sufficient for the reliability of test scores (Büyüköztürk, 2013). The item-total correlations were between .35-.84 in the PTRS, .78-.89 in the proximity dimension, and .39-.78 in the conflict dimension. In this context, it can be stated that the items in the scale distinguish individuals well according to the item-total correlations in the general and dimensions of the PTRS. Items with an item-total correlation of .30 and above distinguish individuals well (Büyüköztürk, 2013).

Discussion

In this study, the adaptation of the original Principal-Teacher Relationship Scale (PTRS), developed by Zee, Roorda, and Hanna (2023), to Turkish culture was conducted. Within this framework, the Turkish language equivalent of PTRS was administered to 389 teachers working in primary and secondary schools in Konya province. Validity and reliability analyses were performed on the dataset. In the normality analyses conducted in this direction, CFA was performed on the basis of the model based on covariance for validity, and Cronbach alpha was performed for reliability since the data set fulfilled the assumption of normality.

The CFA findings regarding the validity of the two-dimensional structure of the Turkish version of PTRS have demonstrated that the scale is valid. The findings align with the factor structure in the original study conducted by Zee, Roorda, and Hanna (2023). The CFA results from the original scale development process also confirmed the two-dimensional structure of PTRS. Therefore, in the process of adapting PTRS to Turkish, the two-dimensional structure of the scale has been supported by the findings from the development of the original scale. The theoretical foundations of PTRS were established by Zee, Roorda, and Hanna (2023). Accordingly, a healthy principal-teacher relationship involves the presence of positive elements such as love, respect, transparency, sincerity, trust, and collaboration between principals and teachers. By fostering such healthy relationships, a positive atmosphere can be created in schools. This, in turn, contributes to the overall well-being of stakeholders, including students, and facilitates effective and successful educational processes. With the synergy created, all stakeholders can experience a happy and peaceful learning environment in which they can effectively participate in teaching and learning activities. The theoretical model that underlies PTRS, along with its compatibility with the findings of the current study, demonstrates its validity for Turkish culture. However, it should be noted that the Principal-Teacher Relationship Scale has not been used as a data collection tool in any scale development, adaptation, or independent quantitative or qualitative studies in Turkey.

The study findings demonstrate that the Turkish version of PTRS is a highly reliable data collection tool in both its overall scale and its sub-dimensions. The current results are consistent with the findings of the study conducted by Zee, Roorda, and Hanna (2023), which also determined that PTRS is a highly reliable data collection tool. When the validity and reliability findings from both the current study and the study by Zee, Roorda, and Hanna (2023) are examined holistically, it can be concluded that the Turkish version of PTRS is suitable for use in studies focused on principal-teacher relationships.

Conclusion and Recommendations

In this study, the original Principal-Teacher Relationship Scale (PTRS) developed by Zee, Roorda, and Hanna (2023) was adapted to Turkish culture, and validity and reliability analyses were conducted. The analysis of the data indicated that the two-dimensional Turkish version of PTRS is a valid and reliable tool for data collection. Therefore, it can be stated that the Turkish version of PTRS is suitable for conducting studies on principal-teacher relationships in educational institutions in Turkey. The data in the study were obtained from teachers. However, future research can include school administrators as participants in data collection. Additionally, studies can be designed to include other educational levels that may differ from the current study, which focused on primary and middle schools. By including different sample groups, the validity and reliability of PTRS can be tested in various contexts. Furthermore, testing the validity and reliability of the Turkish version of PTRS with data obtained from larger samples can contribute to the literature in this field.

Authors Contribution Rate

All authors contributed equally to the article.

Conflicts of Interest

There is no conflict of interest.

Ethical Approval

Ethical permission (**Date** May 23, 2023; E-16343714-605.02-522062) was obtained from Selcuk University Rectorate Education Faculty Dean's Scientific Ethics Evaluation Committee institution for this research.

References

Aimah, S., Ifadah, M., & Linggar Bharati, D. A. (2017). Building Teacher's Pedagogical Competence and Teaching Improvement Through Lesson Study. *Arab World English Journal (AWEJ), 8*(1), 66-78.

Akgün, N., Yıldız, K. & Çelik, D. (2009). The high school principals' managing methods for solving conflicts with teachers. *Bolu Abant İzzet Baysal University Journal of Faculty of Education, 9*(1), 89-101.

Allen, N., Grigsby, B., & Peters, M. L. (2015). Does leadership matter? Examining the relationship among transformational leadership, school climate, and student achievement. *International Journal of Educational Leadership Preparation, 10*(2), 1- 22.

Amini, Zelda., Hariri, H., & Rini, Riswanti. (2022). How do interpersonal conflict management of principal develop teacher pedagogical competence: literature review. *At-Tajdid: Jurnal Ilmu Tarbiyah, 11*(1), 43-51.

Andrew, L., Parks, D., Nelson, L., & Phi Delta Kappa Commission on Teacher/Faculty Morale. (1985). *Administrator's handbook for improving faculty morale*. Bloomington, IN: Phi Delta Kappa.

Barnett, K. & McCormick, J. (2004). Leadership and individual principal-teacher relationships in schools. *Educational Administration Quarterly*, 40(3), 406-434.

Bhella, S. K. (1982). Principal's leadership style: Does it affect teacher morale? *Education, 102*, 369-376.

Blase, J. & Blase, J. R. (1994). *Empowering teachers: what successful principals do*. Thousand Oaks, CA: Corwin Press.

Boucher, M. M. (2013). *The relationship of principal conflict management style and school climate.* (Doctoral dissertation). Retrieved from https://scholarcommons.sc.edu/etd/948.

Brezicha, K., Bergmark, U., & Mitra, D. L. (2015). One size does not fit all: Differentiating leadership to support teachers in school reform. *Educational Administration Quarterly, 51*(1), 96-132.

Büyüköztürk, Ş. (2013). *Veri analizi el kitabı.* Ankara: Pegem A. [*Manual of data analysis*]

Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2012). *Bilimsel araştırma yöntemleri.* Ankara: Pegem A. [*Scientific research methods*]

Caldwell, W. E., & Byers, K. (1988). Principals and teachers: using cooperative strategies to manage conflict and improve school climate. Retrieved from https://eric.ed.gov/?q=Principal-teacher+conflicts&id=ED306646.

Cemaloğlu, N., & Kılınç, A. Ç. (2012). The relationship between school admisnistrators' leadership styles and teachers' organizational trust level. *Mehmet Akif Ersoy University Journal of Education Faculty, 12*(23), 132-156.

Comrey, A. L., & Lee, H. B. (1992). *A First course in factor analysis.* (2th Edition), New Jersey: Lawrence Erlbaum Associates.

Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2014). *Sosyal bilimler için çok değişkenli istatistik: SPSS ve Lisrel uygulamaları.* Ankara: Pegem A. [*Multivariate statistics for social sciences: SPSS and Lisrel applications*]

DeVellis, R. F. (2014). *Ölçek geliştirme: Kuram ve uygulamalar* (Trans. Ed. T. Totan). Ankara: Nobel. [*Scale development: Theory and practices*]

Dinger, T. K. (2018). *The relationship between teacher communication satisfaction, teacher job satisfaction, and teacher perception of leadership efficacy* (Order No. 10808016). Available from ProQuest Dissertations & Theses Global. (2061549870).

Downs, J. O. (2018). *Exploring the interdependence of trust and communication in the teacher-principal relationship* (Order No. 29115586). Available from ProQuest Dissertations & Theses Global. (2665132968).

George, D., & Mallery, M. (2010). *SPSS for Windows step by step: A simple guide and reference, 17.0 update* (10th ed.). Boston, MA: Pearson.

Gravetter, F. J., & Wallnau, L. B. (2000). *Statistics for the behavioral Sciences* (5th ed.). Belmont, CA: Wadsworth/Thomson Learning.

Gök, R. & Tarayan, M. (2023). Primary school teachers views on positive school climate. *Asya Studies, 7*(24), 43-66.

Gürbüz, S., & Şahin, F. (2014). *Sosyal bilimlerde araştırma yöntemleri: Felsefe-yöntem-analiz.* Ankara: Seçkin. [*Research methods in social sciences: Philosophy-method-analysis*]

Güzelgörür, F., Demirtaş, H., & Balı, O. (2021). The relationship of school principals' managament style and school climate. *E-International Journal of Educational Research, 12*(4). 129-150.

Hair, J., Ringle, C., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice, 19*(2), 139-151.

Halawah, I. (2005). The relationship between effective communications of high school principal and school climate. *Education, 126*(2), 334-335.

Helvacı, M. A. & Aydoğan, İ. (2011). A study on the perceptions of teachers on the qualities of effective school and school principal. *Usak University Journal of Social Sciences, 4*(2), 41-60.

Hulsbos, F. A., Evers, A. T., & Kessels, J. W. M. (2016). Learn to lead: Mapping workplace learning of school leaders. *Vocations and learning, 9*(1), 21-42.

Hunter-Boykin, H. S., Evans, V. (1995). The relationship between high school principals'leadership and teachers' morale. *Journal of Instructional Psychology, 22*(2). 152-162.

Jöreskog, K. G., & Sörbom, D. (1996). *Lisrel 8: User's reference guide.* Lincolnwood: Scientific Software International.

Kanyip, R. F. D. B. P., Ezeh, R. S., & Chioma, S. (2023). Principals' and teachers' perception of the impact of conflict management strategies on effective teaching in secondary schools in Enugu State, Nigeria. *International Journal of Multidisciplinary Research And Analysis,6*(1), 121-131.

Katz, D., & Kahn, R. L. (1978). The social psychology of organizations (Vol. 2). New York, NY: Wiley.

Kelley, Robert C., Thornton, Bill. & Daugherty, Richard. (2005). Relationships between measures of leadership and school climate. *Education, 126*(1),17.

Kline, R. B. (2013). Exploratory and confirmatory factor analysis. In Y. Petscher & C.

Latsch, N. (2017). *A correlation between trust and principal leadership behaviors in rural low socio-economical schools* (Order No. 10622112). Available from ProQuest Dissertations & Theses Global. (1957414922).

Li, L., Hallinger, P. & Ko, J. (2016). Principal leadership and school capacity effects onteacher learning in Hong Kong, *International Journal of Educational Management, 30*(1), 76 – 100.

Louis, K. S., Mayrowetz, D., Smiley, M. & Murphy, J. (2009). The role of sensemaking and trust in developing distributed leadership. In A. Harris (Ed). *Distributed leadership,*157-180. London: Springer

MacCallum, R. C., Widaman, K. F., Preacher, K. J., & Hong, S. (2001). Sample size in factor analysis: the role of model error. *Multivariate Behavioral Research, 36*(4), 611-637.

McLeary, C. & Cruise, P. (2012). Modelling organizational trust: Addressing challenges of measurement invariance. 470-XIII.

MNE (2023). *2022-2023 academic year education statistics. Retrieved from https://konya.meb.gov.tr/*

Nnamara, M. A. (2005). *Essential Conflict Management Skills for Principal.* Onitsha: Jet Publishers.

Nunnally, J. C. (1978). *Psychometric theory.* New York: McGraw Hill.

Price, H. E. (2012). Principal–Teacher Interactions: How Affective Relationships Shape Principal and Teacher Attitudes. *Educational Administration Quarterly*, *48*(1), 39–85.

Price, H. E. & Moolenaar, N. M. (2015). Principal-teacher relationships: foregrounding the international importance of principals' social relationships for school learning climates. *Journal of Educational Administration*, *53*(1).

Schein, E. H. (2010). *Organizational culture and leadership* (4th ed.). San Francisco: Jossey-Bass.

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6th ed.). Boston: Allyn & Bacon.

Tavşancıl, E. (2014). *Tutumların ölçülmesi ve SPSS ile veri analizi.* (3. Baskı). Ankara: Nobel. [*Measurement of attitudes and data analysis with SPSS*]

Tschannen-Moran, M. & Gareis, C.R. (2015). Faculty trust in the principal: an essential ingredient in high-performing schools. *Journal of Educational Administration,*53(1), 66-92.

Türnüklü, A., Şahin, İ., & Öztürk, N. (2002). Conflict resolution strategies of students, teachers, principals and parents in primary school. *Educational Administration in Theory & Practice, 32*(32), 574-594.

Weitten, W., Yost-Hammer, E., & Dunn, D. S. (2016). *Psychology and contemporary life.* (E. İkiz, Trans. Ed.), Ankara: Nobel Publishing.

Yıldız, K. (1996). *The communication of principals and teachers in elementary school in Bolu.* (Unpublished master's thesis). Abant İzzet Baysal University, Social Sciences Institute, Bolu.

Yılmaz, E. (2006). Okullardaki örgütsel güven düzeyinin bazı değişkenler açısından incelenmesi. *The Journal of Selcuk University Social Sciences Institute, 16*, 739 756. [Examining the level of organizational trust in schools in terms of some variables]

Yukl, G. (2012). Effective leadership behavior: what we know and what questions needs more attention. *Academy of Management Perspectives, 26*(4), 66-85.

Zee, M., Roorda, D. L., & Hanna, F. (2023). Principal–teacher relationships: Dimensionality and measurement invariance of a measure for primary and secondary school teachers. *Management in Education*, *0*(0). https://doi.org/10.1177/08920206231154740

Principal-Teacher Relationship Scale (Turkish Version: Müdür-Öğretmen İlişkisi Ölçeği)

	Yakınlık
1	Müdürümle sevgi ve saygıya dayalı samimi bir iletişimim/etkileşimim var.
2	Müdürüm benimle olan iletişimine/etkileşimine değer verir.
3	Müdürümle olan iletişimim/etkileşimim beni huzurlu ve mutlu hissettirir.
4	Duygu ve deneyimlerimi müdürümle açıkça paylaşırım.
5	Müdürümle olan etkileşimlerim beni faydalı ve kendinden emin hissettirir.
	Çatışma
6	Müdürümün bana adil davranmadığını düşünürüm.
7	Müdürümle yaşadığım çatışmalar enerjimi düşürür.
8	Müdürümün bana karşı olan duygu ve düşünceleri öngörülemez ya da aniden değişkenlik gösterir.
9	Elimden gelenin en iyisini yapmama rağmen müdürümle olan iletişimimden/etkileşimimden rahatsızım.
10	Müdürümle olan iletişimimde/etkileşimimde kendimi karşılıklı bir mücadelenin içerisinde hissederim.

- **The Principal-Teacher Relationship Scale (PTRS) can be used without getting permission but with citation.**
- **Important notes about the scale:**
  - The items of the conflict dimension (6-10) should be reverse-coded.
  - The high scores obtained from the overall scale indicate that the principal-teacher relationship is positive/high/positive.

An Analysıs Of 21st-Century Skılls Knowledge And Experıences Of Prımary School Teachers

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An Analysıs of 21st-Century Skılls Knowledge and Experıences of Prımary School Teachers

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Abstract

21st century skills can be considered a tool to facilitate students' lives and prepare them for the world of the future. In this context, teachers' knowledge and experience of 21st century skills will be effective in solving possible problems that students will experience and in turning them into socially accepted, active, questioning, self-sufficient, well-equipped, determined, harmonious, social, and qualified individuals. In this study, phenomenological research design, one of the qualitative research methods, was used. The study group for the research consisted of 26 primary school teachers working in Balıkesir. In the study, criterion sampling and maximum variation sampling methods, which are purposive sampling methods, were used. In the 4th Grade Social Studies course, teachers' experiences regarding how 21st century skills are perceived by teachers and how they are reflected in the program were collected by interview method. Content analysis was used in the analysis of the qualitative data obtained from the interviews. In this study, interview questions were evaluated in three different skill groups. Among the findings of the study, teachers see themselves as inadequate in "entrepreneurship" and "project management" and in parallel, they place less emphasis on activities for the development of these skills in students in the social studies program; they mostly find themselves in "Empathy", "Lifelong learning", "Problem Solving and Decision-Making." However, they mentioned the inadequacy of today's education system in acquiring skills because the curriculum is intense, resources or textbooks do not support skill-based activities, and our assessment-evaluation approach is exam-oriented.

Keywords: 21st century skills, Social studies program, Primary school teachers

Introduction

The idea of teaching students the abilities they will need to meet their present and future requirements in a globalizing environment is known as 21st-century learning. To understand modern society, we must know why students require these talents. It is clear that we are going through a process of globalization where having knowledge is no longer enough and those who do not know how to use the latest information are "out of the game." Teachers must instruct students in fundamental academic skills like reading, writing, and mathematics, as well as how to use information and communication technologies, solve complex problems, think critically, and be effective in both theory and practice, in order to meet the demands of the modern world (Vivekanandan, 2019). The implementation of this transition process depends heavily on teachers' capacity to incorporate these abilities into lessons, to plan activities that will help students develop these skills, and on the physical and cultural resources that schools have available to them. Education scholars and institutes have conducted numerous studies on 21st-century skills in tandem with their interest in teaching and mastering these abilities. The Twenty-First Century Education Commission was founded by UNESCO in 1993. The publication "Learning: The Treasure Within Us" represents the notion that lifelong education is both a public and an individual right and good, evidencing the idea that lifelong education is both a public and an individual right and good. He assessed an effective educational system in this setting using the four criteria of learning to know, learning to do, learning to be, and learning to live together. For the type of education that should be offered in the twenty-first century, he called attention to the social role of education and the ensuing balance between knowledge and action, between individual and social learning (Carneiro & Draxler, 2008). It is possible to look at several illustrations of what these abilities are and how they are categorized. For instance, in 2016, the World Economic Forum divided the necessary skills for the 21st century into three categories—Basic Literacy,

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Competencies, and Character Traits—and sixteen (Basic Literacy: Literacy, Numeracy, Scientific Literacy, Information Literacy, Financial Literacy, Cultural and Civic Literacy; Competences: Critical Thinking/Problem-Solving, Creativity, Communication, Collaboration; Character Traits: Curiosity, Entrepreneurship, Constant Learning), respectively. Additionally, several organizations and educational institutions from all around the world have separately created frameworks for these talents. A strategic education initiative called "Framework for 21st Century Learning" is being carried out in 21 US states with the help of 33 institutions. The project seeks to provide students with the knowledge and abilities they'll need in both their present and future professional environments. Themes, important subjects, and talents were found in this situation. "21st-century support systems" are the foundation for all of these. The three headers that express the skills covered by the framework are further broken down into subheadings to provide further explanation. The three basic categories of information, media, and technology skills, life skills, and career skills are used to define skills. The four C's, or critical thinking, creativity, cooperation, and application of invention, are often used to identify learning and innovation skills. Information literacy, media literacy, and ICT literacy are subcategories of information, media, and technology skills. According to Gelen (2017) and the Framework for 21st Century Learning (2017), life and career skills include adaptability and flexibility, self-management and entrepreneurship, social and intercultural competence, productivity and accountability, and leadership and responsibility. With the Partnership for 21st Century Abilities, the National Council for Social Studies (NCSS), one of the most significant organizations in the area of social studies education in the United States, aspires to equip social studies instructors and classrooms with 21st-century abilities. In this context, the content of social studies subjects including history, geography, civics, and economics was used to identify the key topics in the 21st-century learning framework. The 21st-century abilities contained in the learning framework were given the primary heading "global awareness" as well as the subheadings "financial, economic, business, and entrepreneurship literacy," "civic literacy," and "health literacy" (Yell & Box, 2008). The P21 framework defines global awareness and its associated subheadings as transdisciplinary topics of the 21st century (P21 framework definitions, 2015). Among the organizations and groups that categorize skills are "Asia Society Partnership for Global Learning (ASIA Society)", "Assessment and Teaching of 21st Century Skills (ATCS),", and the International Society for Technology in Education (ISTE). Additionally, it participates in international organizations like the OECD, EnGauge, and the European Union (Benek, 2019; Kılıç, 2022).

While there are extensive studies on 21st-century skills in the world, the first study conducted in Turkey in this context is the study to determine the 21st-century teacher profile. In this study, "What is the current student profile in secondary education in the 21st century, and what is expected to happen?. Questionnaires were sent to students, teachers, and administrators. 25,000 students, 10,900 teachers, and 1870 administrators participated in the surveys. Students indicated that 26.4% of them slightly agreed or strongly disagreed with the statement "the education system teaches students to respect people", 33.1% slightly agreed or strongly disagreed with the statement "the education system develops students' understanding of solidarity and benevolence", and 43.4% slightly agreed or strongly disagreed with the statement "the education system gives students the ability to solve problems on their own" (MEB (Ministry of National Education), 2011).

Following this work, curriculum updating, determining the 21st-century student profile, Fatih Project work, the Turkish Qualifications Framework, and the 2023 Vision document were among the activities related to qualifications and skills. The Turkish Qualifications Framework is a common national qualification framework that is planned in an integrated manner with the European Qualifications Framework (EQF) and shows the qualifications acquired at all levels of education and learning environments (Hamarat, 2019; TQF, 2016). The curricula in Turkey have been updated within the scope of the Turkish Qualifications Framework since 2017–2018; key competencies have been reflected in the curricula; and innovations have been introduced in the structure and functioning of the curricula, the basic philosophy of the program, the objectives of the program, the skills to be gained by the student, the concept of root values, and the measurement and evaluation approach (TTKB, 2017). In this context, it is important to see how 21st-century skills are reflected in the renewed social studies program and how teachers, who are the implementers of the program, follow a path while teaching these skills. Now, instead of rote knowledge, we need to have skills that allow us to use the information we can access from everywhere effectively and according to its purpose. In this context, first of all, the perceptions, opinions, experiences, and evaluations of our teachers, who guide the knowledge towards gaining these skills in students, and how they manage this process that takes place in the 21st century, are important. This study aims to reveal the knowledge and experiences of MEB regarding 21st-century skills. In line with this purpose, it is aimed at investigating how primary school teachers try to develop 21st-century skills in students within the scope of 4th-grade social studies program achievements and activities. Determining the presence of 21st-century skills in the programs is considered important in terms of showing our competence in following the qualitative changes in education. In this context, the social studies program is considered a tool reflecting the study.

The views of teachers, who are the practitioners of 21st-century skills, on 21st-century skills, their knowledge and experiences, and their ability to evaluate the education system in terms of skills reflect the main purpose of the study. In the literature, the classifications of 21st-century skills in P21, ISTE, EU, and OECD are mostly

encountered. In this study, the 4th-grade social studies curriculum was examined based on the views of primary school teachers in terms of the most well-known skills in P21, the skills revealed by Doğan (2020) after his master's study, and the skills in the MEB social studies curriculum (2018).

In this study, which examines the knowledge and experiences of primary school teachers regarding 21st-century skills, answers to the following research questions are sought:

1. What are the opinions of primary school teachers about 21st-century skills?
2. What are the opinions of primary school teachers about the P21 Learning Framework?
3. What are the opinions of primary school teachers about the inclusion of skills in the social studies program?

Method

Phenomenological research design, one of the qualitative research methods, was used in this study, in which the knowledge and experiences of primary school teachers regarding 21st-century skills were examined. Phenomenology is the description of a phenomenon in terms of the experiences of a particular group. Researchers try to understand the world of each participant. The phenomenological research method asks each participant to describe their own experiences in their own terms (Christensen, Burke, Johnson, & Turner, 2015, p. 408–409). Phenomenology is not just a description; it also involves an interpretive process in which the researcher interprets the meaning of the experiences (Creswell, 2018). The researcher collects data from people who experience the phenomenon and develops a unified description of the essence of the experience for all individuals. This definition includes "what" they experience and "how" they experience it (Moustakas, 1994). Accordingly, in this study, the knowledge and experiences of primary school teachers about 21st-century skills were revealed using a phenomenological research design. In this context, in the content of the research, the opinions of primary school teachers about what 21st century skills are, the methods they use to develop these skills in students, and how they integrate them into their lessons within the framework of the social studies program were investigated. In accordance with the phenomenological research pattern, what they experience and how they are handled within the framework of 21st century skills.

Study Group

The study group consisted of 26 primary school teachers working in Balıkesir province in the first semester of the 2022–2023 academic year. In the study, in which only primary school teachers from private and public schools in the Karesi and Altıeylül districts of Balıkesir province participated, criterion sampling and maximum diversity sampling methods were used. The criterion for participation in this study was that the teachers were primary school teachers, were teaching 4th-grade classes, or had previously taught the social studies course in 4th grade. In this study, 21st-century skills were investigated in the social studies course, which started for the first time in the 4th grade. Therefore, the criteria were determined as the grade level (4th grade) and being a primary school teacher. In terms of maximum diversity, primary school teachers working in public and private schools in Altıeylül and Karesi districts in the provincial center of Balıkesir province were reached, and diversity was tried to be ensured in the inclusion process based on criteria such as the region, professional experience, gender, and working in private or public schools. The participants in the research work in 8 different primary schools (4 public and 4 private). Fifteen male teachers and 11 female teachers were included in the study.

Data Collection Tools

The researcher created a semi-structured interview form that was employed in the study as a means of gathering qualitative data. Semi-structured interview formats, in accordance with Merriam (2018), give participants the freedom to explain how they see the world. Since the research group's perceptions of 21st-century abilities and their inclusion of these skills in the social studies course were evaluated based on their own claims, it was deemed appropriate to employ the semi-structured interview form as a data-gathering instrument. Three subject matter experts who work in the primary school teaching department and two subject matter experts who work in the social studies teaching department were consulted regarding the form's content validity. The 20 interview questions that were originally planned were reduced to 15 as a consequence of the expert opinion, and the interview form was then finished. The interview form's questions, according to field professionals in primary school education and social studies education, were clear and pertinent to the study. The research also took into account the 21st-century skills included in the MEB social studies curriculum, the skills found in the P21 learning framework, and the skills found in Doğan's (2020) study. The interview questions below were used to elicit information from instructors regarding how 21st-century abilities are viewed by them in the 4th grade Social Studies course and how they are reflected in the curriculum.

Figure 1. Interview Form Regarding Primary School Teachers' Knowledge and Experiences on 21st-Century Skills

Data Collection

The data obtained from the study was collected through face-to-face interviews with 26 primary school teachers. The data collection tool in Figure 1 was used during the interviews. Data collection continued until the end of the 2022–2023 academic year. Data collection continued until the end of the 2022-2023 academic year. Before starting the interviews, the purpose of the research was explained to the participants, and examples of 21st-century skills from the 4th grade Social Studies Program or P21 learning framework were given. The consent statements of the participants before the research about whether they would participate in the research were recorded on a voice recorder. All interviews were conducted at their schools at a time of their preference for the teachers to be able to express their experiences about 21st-century skills openly and clearly, not to feel any time pressure during the interview, and to be more comfortable. After obtaining the consent of the participants, the interviews were recorded using a voice recorder. The interviews ranged from approximately 45 minutes to 80 minutes.

Data Analysis

The researcher used a computer to translate the transcripts of the interviews into a 30-page interview text. The qualitative information gathered from the interviews was examined through the technique of content analysis. The goal of content analysis is to group related information into themes and then organize and interpret it in a way that the reader can understand (Yıldırım & Şimşek, 2006). Direct quotations were occasionally incorporated into the analysis of the interview data in accordance with the established themes and codes. According to a study by Joseph Maxwell (2005, cited in Christensen, Burke, Johnson, & Turner, 2015), validity techniques employed in qualitative research will be taken into consideration. For descriptive validity in the research, researcher diversity was taken into account. The participants were informed of the analyses' interpretive validity, or whether they were consistent with their point of view. Direct quotations from the participants statements were used in the study. Coders regularly held meetings to ensure the validity of the research. The Miles and Huberman (1994) formula was used to calculate the dependability between the coders, which was found to be .92. The outcome of this study was regarded as reliable.

Findings

Demographic Findings

A total of 26 primary school teachers working in Balıkesir city center participated in the study. Sixteen of these primary school teachers work in public schools affiliated with the Balıkesir Ministry of National Education, and 10 of them work in private schools. In the study, attention was paid to providing diversity in terms of data sources. In this context, primary school teachers working in public and private schools in Altıeylül and Karesi districts in the province center of Balıkesir were reached, and diversity was tried to be ensured in the inclusion process based on criteria such as region, professional experience, gender, and working in private or public schools. The participants in the research worked in 8 different primary schools (4 public and 4 private). Fifteen male teachers and 11 female teachers were included in the study. Of the 26 teachers who participated in the study, 18 were primary school teachers with "26 years or more of professional experience", 2 were teachers with

"between 21 and 25 years of professional experience", 3 were teachers with "between 16 and 20 years of professional experience", 2 were teachers with "between 11 and 15 years of professional experience" and 1 was a teacher with "between 6 and 10 years of professional experience". All of the teachers who participated in the study were teachers who were teaching fourth-grade students per the purpose of the study and had previously taught the social studies course in the fourth grade.

Demographic information about the twenty-six (26) primary school teachers who participated in the study is presented in Table 1.

Table 1. Demographic information about the participants

Categories	Demographic Features	f	%
	Private	10	38.46
Type of Institution	Public	16	61.53
	Total	*26*	*100*
	Woman	11	42.30
Gender	Man	15	57.69
	Total	*26*	*100*
	6-10 year	1	3.84
	11-15 year	2	7.69
	16-20 year	3	11.53
Professional Experience Period	21-25 year	2	7.69
	26 year and above	18	69.23
	Total	*26*	*100*

Findings for the First Interview Question

Among the interview questions, 16 of the participants (61.53%) answered "no" to the question "Have you heard the expression "21st Century Skills" before?". All of the primary school teachers who said that they had never heard of these skills before were teachers with 26 years or more of professional experience. 10 (38.46%) primary school teachers stated that they had heard this expression.

Findings for the Second Interview Question

When the 10 primary school teachers who stated that they had heard the expression "21st Century Skills" before were asked to explain what this expression was, 7 teachers (70%) tried to explain this expression by using the concept of "technology" and were able to define 21st Century Skills only as "technological developments". Three teachers (30%) were able to diversify their definitions not only with the concept of technology but also by drawing attention to different skills. The views of the primary school teachers are given below. It is noteworthy that there are a high number of teachers who associate it with the concept of technology.

*P14. **Technological development**, innovation, productivity, and efficiency come to mind.*
*P16. I think of **technology-related** things such as media literacy and computers.*
*P9. **Mastering computers and technology**, electronic media come to mind.*
*P13. **Creative and critical thinking**, reasoning, and media literacy come to mind, and we are already applying them.*

Findings for the Third Interview Question

Another question asked to the primary school teachers was "Have you heard of the 21st Century Learning Framework before?". This framework, which has been widely used in other countries in the world, especially in the USA, includes the skills, knowledge, and competencies that students should have to be successful in work and life. While no one among the pre-service primary school teachers had heard of this framework before, one of them only answered yes but could not give information about its content.

Findings for the Fourth Interview Question

Before posing this question, the 21st Century Skills and the 21st Century Learning Framework were mentioned, and the table about the skills in the MEB social studies program was shared with our primary school teachers so that they would be informed. 4. The research question "Which skills in the 4th-grade social studies program that you think are related to 21st Century Skills, can you explain?" was posed to the primary school teachers who are currently teaching the fourth grade. 20 out of 26 primary school teachers (76.92%) stated that all the skills in the MEB social studies curriculum should be acquired for 4th-grade students, while they stated "critical thinking", "empathy", "social participation", "problem solving", research," and "entrepreneurship" as the most important skills, especially for students at their grade level. The opinions of primary school teachers are given below.

*P25. I think they are all related... I use **critical thinking, empathy, and entrepreneurship** skills, among the most related ones and the ones I use the most.*

*P14. As much as we can, I especially emphasize **empathy and research skills** because I think research is very valuable in social studies lessons.*

*P.21. Although we generally work on developing all 21st-century skills, I can say that the skill we especially emphasize is **empathy**. Because I observe that after the student gains this skill, all his or her behaviors and life change in general. Therefore, I think empathy is a very important skill.*

Findings for the Fifth Interview Question

Regarding the question "Do you teach 21st Century Skills in the Social Studies course?", all primary school teachers stated that they use these skills when appropriate and under the characteristics of the subjects and outcomes.

P18. Yes, of course, I emphasize all of these skills when appropriate.

P4. Yes. We use these skills in our lessons, but we do not teach them under the name of 21st Century Skills. We make them acquire them as normal skills.

Findings for the Sixth Interview Question

Teachers who said that they teach 21st century skills in social studies classes were asked how they did this and were asked to give examples. The thoughts of the primary school teachers were divided into nine categories based on their responses to this question. The teachers emphasized the value of using the brainstorming process when teaching the social studies course's skills, particularly to fourth-graders. They provided examples of how to have students ask questions as they learned these abilities and use leading questions to make sure they achieved their goals. It was noted that a total of 11 primary school instructors provided examples of how to use the abilities in relation to the results when describing them. By utilizing generic terms, 15 primary school teachers contributed to the creation of categories. Six of the eleven primary school teachers that provided examples discussed the challenges associated with achieving the outcome "SB.4.2.4. Understands the importance of the National Struggle based on the lives of the National Struggle Heroes" and provided examples of how to improve in this area. These abilities were attained through the use of technology, tangible materials, and song-based instruction. Within the context of the outcome "SB.4.2.1. Conducts a family history study by utilizing oral, written, and visual sources and objects," three primary school teachers said that they taught students skills through conducting interviews. Inferences were made about the location of any site in the surroundings by two primary school teachers. They claimed that they taught students the abilities listed under the category of brainstorming and the subsection of asking questions.

Table 2. Teacher opinions on how 21st-century skills are taught

Category	Sub-Category	f
Brain storming	Getting them to think	3
	Ask questions	2
Enabling them to benefit from technology	Watch the Youtube video	2
	Using Web 2.0 tools	1
	Watching videos on Eba	1
Doing project work		2
Make a drama		3
Teach with song		1
Make an interview		2
Make research		3
Using tangible material	make use of a map	1
	make use of the globe	1
Just explanation		4
Total		26

21st-century skills in teaching 21st-century skills to students based on examples of achievements
"SB.4.2.4. Understands the importance of the National Struggle based on the lives of the heroes of the National Struggle." Examples related to the learning outcome
*P6. For example, for the National Struggle topic, **we started with a song**. I had sent songs specific to that topic. I looked at them and moved on to practical things. For example, **on the map of Turkey**, who occupied which*

regions, which regions, and which provinces do we have? They learned that with that song, they could show it immediately. That's how we started. Now we will move on to the front.
"SB.4.2.1. Conducts a family history study using oral, written, and visual sources and objects." Examples related to the acquisition
*P7. While teaching the outcome "Conducts a family history study", **we interviewed** the elders of the family and used oral history. We compared their birth dates and the age at which they started school, and we asked "Which one is older, earlier, or later".*
"SB.4.3.1. Makes inferences about the location of any place around him or her." Examples related to the learning outcome
*P11. In terms of directions, I went right, then left, then forward and backward. **I ask questions like,** "Where was my home then? Where am I located? What comes to mind when you think of directions?" **and make them think**. I use the **brainstorming technique**.*

Views of teachers explaining 21st-century skills based on skills in teaching 21st-century skills to students

Critical Thinking Skills
*P21. First of all, I encourage my students to think and question. I emphasize that they should not believe every piece of information they hear and that they should question; therefore, I emphasize **critical thinking**.*

Empathy Skills
*P25. We try not to make our friends who are different feel bad, try to comprehend differences, develop **empathy skills**, convey a sense of justice between people, and prevent someone from being wronged. We make sure that everyone has a say in every lesson. Everyone can speak their mind in our class.*

Environmental Literacy Skills
*P26. As an example of environmental literacy, I explain the importance of recycling, global warming, climate, the use of raw materials, and their dimensions by associating them with daily life. I explain the food and water problems in the world from educational and economic perspectives. I use **direct narration** according to the subject.*

Findings for the Seventh Interview Question
In response to the question, "Which of the 4C skills included in the 21st-century learning framework in the Social Studies program do you do the most activities for teaching? Can you give an example?" It was revealed that the primary school teachers stated that they mostly did activities for teaching critical thinking and problem-solving skills (f:18), followed by cooperation (f:11), communication (f:8), and creative thinking and innovation (f:2). Teachers stated that they mostly conducted activities to develop students' critical thinking and problem-solving skills. The fact that only two opinions of primary school teachers exist on teaching creative thinking and innovation skills may limit our children, who will shape the future, from being useful for society with their new ideas and original products in the future.

Table 3. Primary school teachers' views on the teaching of 4C skills in the social studies course

4C Skills in the 21st Century Learning Framework	f
1. Critical Thinking and Problem-Solving Skills	18
2. Creative Thinking and Innovation Skills	2
3. Communication Skills	8
4. *Cooperation Skills*	11
Total	39

Critical Thinking and Problem-Solving Skills
P6. We work on developing critical thinking skills. We started the First World War from Çanakkale, why were we invaded? We made the connection "Children, there have been attacks recently. Our country is very attractive in terms of location. We had enemies against our country who were constantly trying to take it, trying to create chaos; there were enemies then and there are enemies today." We showed a photograph, and we dwelled on the ships coming to Istanbul during the occupation. We talked about the bomb in İstiklal with the children. That bomb that was detonated in Istiklal and in 1918 when those ships arrived in the country had the same aim: creating chaos. "Those children didn't do anything to anyone, why are they doing such a thing?" I try to constantly compare the present and the past. There is problem-solving. For example, we cover the topic of nutrients and why obesity occurs. The child finds the problem: "It would be better if he ate this; he wouldn't gain weight like this" or "Our friend's arm was broken on vacation, what should we do for Tolga's arm to heal quickly? What should happen?" Children are always interested in any part of the subject.

Creative Thinking and Innovation Skills
P3. Creative thinking and Applying innovation When a child thinks differently than the class and me, I reward him or her. Because he or she has thought about what we cannot see or think. I emphasize this. The work I give the student is usually individual.

Communication Skills
P22. I think communication is a very important skill, and I try to emphasize it because I find it very important for them to socialize because of their age. I find it very valuable for their future lives that the communication they establish with their families and their environment is of high quality. For example, we have foreign students in almost every class now (immigrant students), and it is very valuable to have strong communication skills to connect with those students. For these reasons, the skill I emphasize the most at the moment is communication.

Cooperation Skills
P13. When we are going to do an activity, I say, "Let's think among ourselves; let these three people think among themselves, and let one of them be the speaker." I give group assignments on national struggle and our culture of cooperation. We do this both in social studies and other lessons.

Findings for the Eighth Interview Question
In response to the question "Which of the information, media, and technology skills included in the 21st-century learning framework in the Social Studies program do you do the most activities for teaching? Can you give an example?" It was revealed that most of the primary school teachers (f: 21) expressed the opinion that they were doing practices for teaching Information and Communication Technology literacy. The general point expressed by the teachers is that they try to teach this skill to students by using technology as a tool rather than teaching technology production. In this context, it was seen that they used online platforms such as EBA, YouTube, Morpa Campus, or web 2.0 tools as examples of developing information and communication technology literacy in lessons. It was determined that they expressed the least number of opinions (f: 2) and gave examples of activities for media literacy.

Table 4. Primary school teachers' views on the teaching of Information, Media, and Technology Skills in the social studies course

Information, Media, and Technology Skills in the 21st century learning framework	f
1. Information Literacy	8
2. Media Literacy	2
3. Information and Communication Technology Literacy	21
Total	31

Information Literacy
P2. The information literacy we are focusing on the most at the moment is information literacy, or processing information. I pay attention to the fact that they can benefit from different sources and interpret the information they obtain from these different sources.

Media Literacy
P13. As media literacy, before starting a program, we gave terms and symbols such as "suitable for a general audience, suitable for ages 18 and above..." We talked about basic media information and did not do anything more detailed.

Information and Communication Technologies Literacy
P9. We use information and communication technology literacy. We use the smart board and EBA. Since there is enough content, I do not produce content myself; I use ready-made content in the form of digital games from Wordwall. Students do not produce content either, and I do not do anything for them to produce.

Findings for the Ninth Interview Question
In response to the question "Which of the life and career skills included in the 21st-century learning framework in the Social Studies program do you do the most activities for teaching life and career skills? Can you give an example?", It was revealed that most of the primary school teachers (f: 12) stated that they mostly did practices for teaching social and intercultural skills. It is seen that teachers generally attribute the reason for this situation to the fact that immigrant children who took refuge in Turkey from Syria in 2011 due to the war took refuge in their classrooms. They stated that they emphasized more on teaching social and intercultural skills due to the

high number of children coming to Turkey from various countries and receiving education in our classrooms. It is also noteworthy that there are opinions (f: 4) stating that they use all the skills defined under life and career skills in the social studies teaching course. Primary school teachers expressed only one opinion about entrepreneurship and self-direction skills. It was determined that they could not give an example of this skill in the social studies course.

Table 5. Primary school teachers' views on the teaching of life and career skills in the social studies course

Life and Career Skills in the 21st Century Learning Framework	f
1. Flexibility and Adaptability	3
2. Entrepreneurship and Self-direction	1
3. Social and Intercultural Skills	12
4. Productivity and Responsibility	5
5. Leadership	5
6. All	4
Total	32

Flexibility and Adaptability
P1. I point out that they should respect each other in all their work about flexibility and adaptation.

Entrepreneurship and Self-direction
P12. I use entrepreneurship and self-direction skills.

Social and Intercultural Skills
P13. I do activities for social and intercultural skills. There are many foreign students in our school; there are seven in my class. When we talk about our cultural heritage, we ask them, "What do you do? What kind of food do you cook? What are your weddings like?" and make them talk and integrate it into the form of questions and answers.

Productivity and Responsibility
P23. I especially want my students to be equipped with productive skills for their country and to have some citizenship responsibilities. At the same time, I care a lot about issues such as what our personal and social rights are, what our freedoms are, and what our responsibilities are towards ourselves, our families, and our country, so I emphasize these issues.

Leadership
P19. I use leadership skills more. When children talk to elders about the subject, I enable them to comprehend the behaviors of a leader and gain this skill by hearing or maybe seeing what they do.

All of them
P8. We usually use all of these skills together while teaching.

Findings for the Tenth Interview Question
Primary school teachers were asked the question, "Which of the skills in the Social Studies program do you think are dysfunctional? Explain your reasons by giving examples." Among the answers given, it was concluded that they mostly saw political literacy (f:14), financial literacy (f:13), and legal literacy (f:11) skills as dysfunctional. In this context, it is seen that the primary school teachers stated that the skills they expressed remained high-level skills when the grade and age levels of primary school children were considered.

Table 6. Primary school teachers' views on the skills they see as dysfunctional in the social studies program

Skills Considered to be Dysfunctional in the Social Studies Program	f
Political Literacy	14
Financial Literacy	13
Legal Literacy	11
Map Literacy	4
Location Analysis	4
Using Evidence	2
No dysfunctional skills	2
Total	50

P6. Financial literacy and political literacy are dysfunctional. That's why the primary school level is not appropriate. Maybe a little earlier for financial literacy. It may be difficult to explain political literacy. We may not be able to get into it much in primary school; it may be a bit of a problem for us.
P7. I find financial literacy, political literacy, map literacy, legal literacy, using evidence, and location analysis dysfunctional because they are high-level and abstract.

Findings for the 11th Interview Question
Primary school teachers were asked the question, "Which of the 21st-century skills in the social studies program are more important for children's adaptation to the age?" Among the answers given, digital literacy (f:16), problem-solving (f:12), and critical thinking (f:11) skills were considered most important by teachers in terms of children's adaptation to the age.

Table 7. Primary school teachers' views on the skills in the social studies program that they see as appropriate for the age we live in

Skills Considered Appropriate for the Age We Live in the Social Studies Program	f
Digital Literacy	16
Problem solving	12
Critical Thinking	11
Empathy	8
Observation	7
Innovative Thinking	6
Research	4
Environmental Literacy	4
Total	68

P8. Digital literacy, information, and communication technologies: there are new developments in information and communication technologies, and it is necessary to know and apply this to catch up with the future. It is necessary to look closely; it is a current issue, not a traditional one.
P11. When I think about it now, I can say that digital literacy and innovative thinking skills are very important in terms of adaptability to the age. Also, in the field of innovative thinking, I think it is very important for our students to develop a mental state about what the new generation can contribute to us rather than what has happened in the past and what has been done in the past. I think it would be very useful in our country to think about what we can do and what we can produce rather than what has happened in the past, and I care that my students are open to development in this regard.
P5. Critical thinking, problem-solving, digital literacy, and empathy skills are important in terms of adaptation to the age.

Findings for the 12th Interview Question
In response to the question, "Do you find the achievements in the social studies program sufficient in terms of reflecting 21st-century skills? Yes/No If your answer is no, why?" Eight primary school teachers answered "Yes" and stated that they found them sufficient, while 18 primary school teachers answered "No" and stated that they did not find them sufficient. Of the 18 people who answered "No", 9 primary school teachers explained the reasons as the intensity of the curriculum, 4 primary school teachers as the insufficiency of physical facilities, 3 primary school teachers as the lack of high-level skills in the acquisitions, and 2 primary school teachers as the lack of time.

Table 8. Primary school teachers' opinions on the adequacy of the achievements in the social studies program in terms of reflecting 21st-century skills

Do you find the achievements in the social studies program sufficient in terms of reflecting 21st-century skills?	f
Yes	8
No	18
Total	26

Table 9. Reasons why primary school teachers find the achievements in the social studies program insufficient for 21st-century skills

Reasons for Finding Insufficient Achievements in the Social Studies Program	f
Curriculum density	9
Lack of physical facilities	4
Lack of high-level skills	3

lack of time	2
Total	18

P17. I think it is a burden brought about by the intensity of the curriculum. Because I think that the social studies course is also very intensive in its framework and other courses are also very intensive in the same way, we cannot take into account the individual differences of children, especially due to the high class sizes, and an education system that seems constructive but is teacher-centered is realized.

P10. No, I think the curriculum is too intense. For example, the subject of the National Struggle contains heavy learning outcomes for 4th-grade students, and the learning outcomes are generally too intense; they should be lightened. I studied these while preparing for KPSS. We cannot breathe while explaining them; we should slow down and explain them.

Findings for the 13th Interview Question

Primary school teachers were given the following list of 21st-century skills and asked which skills they thought they had. In this context, the skills that the primary school teachers think they have the most are Empathy (f:14), Lifelong Learning (f:9), Problem-Solving and Decision-Making (f:8), Reasoning (f:8), and Communication Skills (f:8).

Table 10. Primary school teachers' Opinions on 21st-Century Skills

21st Century Skills List	f
1. Reasoning	8
2. Information and Communication Technologies Literacy	4
3. Information Literacy	2
4. Conflict Management and Resolution	2
5. Language Skills (Using Turkish Correctly and Using a Foreign Language at a Basic Level)	2
6. Nature Literacy	7
7. Empathy	14
8. Flexibility and Adaptability	3
9. Critical Thinking	7
10. Entrepreneurship	1
11. Visual Literacy	3
12. Lifelong Learning	9
13. Effective Use of Resources	3
14. Communication Skills	8
15. Cooperation	5
16. Media Literacy	4
17. Learning to Learn	6
18. Self-Assessment	2
19. Self Regulation	2
20. Self-Esteem	2
21. Self Presentation	2
22. Self-Efficacy	2
23. Self-Management	2
24. Planning	3
25. Problem Solving and Decision Making	8
26. Project Management	1
27. Productivity-Efficiency	2
28. Creativity-Innovation	3
29. National and Universal Citizenship	3
30. Time Management	1
Total	121

*P24. Again, emphasizing that all of them are very important individually, I can say that the skill that I think is more essential and that I have is **empathy**.*

*P11. I go to the bağlama course as **lifelong learning**. Effective and efficient use of resources and cooperation have developed in me.*

*P15. **Reasoning, empathy, flexibility and adaptability, critical thinking, and problem-solving**. I used to perceive criticism as bad, but I am more aware of this issue. As a society, we think criticism is bad. I am open to learning how to learn. I tell our vice principal to open courses for us for **lifelong learning**. I want choral and folk dance activities for teachers.*

Findings for the 14th Interview Question

In response to the question "Which of the 21st Century Skills do you think you lack?", primary school teachers stated that they could not use a foreign language at a basic level (f:18), which is included in language skills. After that, they stated that they did not find themselves sufficient in Information Communication Technology literacy (f:15), Entrepreneurship (f:11), or Project Management (f:8) respectively.

Table 11. Primary school teachers' views on the 21st-century skills they lack

Skills	f
Language Skills (Using a Foreign Language at a Basic Level)	18
Information Communication Technologies Literacy	15
entrepreneurship	11
Project management	8
Creativity-Innovation	5
Productivity-Efficiency	4
Time management	4
Conflict Management and Resolution	3
Planning	3
Effective Use of Resources	2
Total	73

*P16. I think I need to improve my **language skills**. Although I have traveled abroad, I have had a lot of difficulty with the language, and I find myself insufficient in this regard.*
*P9. My **technology literacy, foreign language, and productivity skills** are weak. It is weak because I give more importance to face-to-face education than digital education. I am not overly interested in digital; I use it enough. I am not overly interested in digital, I use it enough. I could be a little more productive.*
*P20. I am also insufficient in **project management**; the project is a gamified reinforcement tool for me. The priority is to finish the subject, then the project can be given.*
*P5. **Time management:** sometimes the time is not enough because I go out of the curriculum during the lesson. **Using resources effectively, information and communication technology literacy**. I do not use tools like Canva; I do not produce.*

Findings for the 15th Interview Question
In response to the question "Is today's education system sufficient to provide 21st-century skills? Can you explain your thoughts?", six primary school teachers answered sufficiently, while 20 primary school teachers stated that they found today's education system insufficient to provide 21st-century skills. In addition, four of the six teachers who stated that it is sufficient emphasized that it also depends on the teacher and the educational environment. When the 20 teachers who thought it was insufficient were asked about the reason for this situation, it was seen that they gave 54 opinions, and the reason for this insufficiency is mostly attributed to the exam system. Teachers mentioned that they tried to do skill-based activities, but due to the intensity of the program (f:7), the fact that the resources or textbooks do not support skill-based activities (f:7), and the fact that our understanding of measurement and evaluation is exam-oriented (f:8), today's education system is inadequate for gaining skills. In addition, the inadequacy of schools and classrooms in terms of equipment in terms of implementing skill-based activities while implementing the program (f:6); not associating the social studies program with other disciplinary areas, and teaching lessons with traditional methods that are far from project-based understanding (f:5) are among the reasons cited for the inadequacy of the system.

Table 12. Primary school teachers' opinions on the adequacy of today's education system in providing skills

Is today's education system sufficient to provide 21st-century skills?	f
Yes	6
No	20
Total	26

Table 13. Primary school teachers' opinions on the reasons why they find today's education system inadequate in providing skills

Why is today's education system inadequate in providing skills?	f
Physical inadequacy of schools and classrooms	6
The busy schedule	7
Insufficient source books and textbooks	7

The interdisciplinary nature of the program	6
Inadequacy of teachers	4
Exam-oriented system approach	8
Not giving importance to branch lessons	2
Too many classes	4
Being away from a project-based education approach	5
Insufficient time to implement the program	3
Earnings not up to date	2
Total	54

*P15. I can say that the curriculum and its **intensity** are one of the biggest problems. For example, I can see that students can be overloaded with historical information, and based on my experience, I can see that students always have problems in these subjects.*

*P14. It is not appropriate for us to **study for the exam** to gain skills in the program, but the child will take the scholarship exam at a private school, which contradicts this. If children establish good social relationships, brainstorm, and self-criticize, the system should change accordingly.*

*P3. I do not find it sufficient because I do not think that education is sufficient; I think that education is an area that needs to be constantly improved. However, I think that the system is already inadequate in the current situation due to the incompatibilities in our education system. In terms of gaining these skills, I think that the **interdisciplinary disconnection in the curriculum** and **intensive programs** that are not suitable for primary school are not suitable for students in the primary school period. Since there is no integrity in teaching in the social studies course, the teachings left to the initiative of the authors can create confusion in the students and cause unconsciousness. In this case, I think the **sourcebooks are not sufficient**.*

*P20. I do not find it sufficient; what we give is not in continuity. I find the **textbooks inadequate** if not much effort is made. For example, I want to give reinforcement in the process, but reinforcement is given at the end of the unit in the textbook. I do not have a problem with the teaching process, but we have problems with reinforcement. The process and reinforcement tools do not follow the same path. I tell stories by storytelling; it is asked as a test in the textbook. Activities and **project-based work are limited**.*

Conclusion

Teachers' perspectives on skills were investigated in three broad areas with the help of 15 interview questions in this study, which looked at the knowledge and experiences of primary school teachers on 21st-century skills. The first of these titles examines primary school teachers' perspectives on 21st-century skills, and it begins by asking the instructors whether they had ever heard the term "21st-century skills" before. It is surprising that none of our instructors, whether they work in private or public schools, had ever heard of this concept while having 26 years or more of professional experience. The researcher provided 16 teachers with examples to help clarify the meaning of this notion, which is regularly represented in updated programs, the Turkish Qualifications Framework, and the 2023 Vision document. More than half of the 10 teachers who were exposed to this idea could only describe the ideas of "technology" and "21st-century skills," but not interpersonal or interpersonal skills, which are referred to as "soft skills" in the literature (Vasanthakumari, 2019). A list of 30 talents created by Doan (2020) was presented to primary school teachers. The primary school teachers claimed that they believed they possessed the greatest levels of "Empathy," "Lifelong learning," "Problem-solving and decision-making," "Reasoning," and "Communication," but that they believed they lacked the skills of "Using a foreign language at a basic level," "Entrepreneurship," and "Project management." For instructors in our country's primary schools, foreign language proficiency is a significant issue. In general, primary school teachers and those who are considering becoming primary school teachers do not feel that they are adequate in this regard (Gönül, 2020; Genç & Kaya, 2011; Beyaztaş, 2017). In this investigation, similar outcomes were attained. According to Entürk (2021), "Entrepreneurship" is the ability to see opportunities based on the people around one and the capacity to develop novel solutions to economic or social challenges. A circumstance that fits with the research is that the majority of elementary school teachers do not believe they are competent in this area. According to research done in Turkey, primary school teachers do not feel that they are at a suitable level of professional competence or ability to teach kids this skill. It is advised that entrepreneurial courses be taught through undergraduate and graduate education programs (Akyürek & Şahin, 2013; Berk, 2009) in order to improve this competence in faculties of education. 21. Teaching with project-based learning and related teaching models (problem-based learning, active learning, etc.) that can encourage the development of more than one skill in students is problematic given that the majority of primary school teachers feel they lack this "project management" skill, which is frequently mentioned among the skills that should be included in the scope of 21st-century skills. According to studies in the literature, the project-based learning approach gives students the highest opportunities for collaboration, communication, research, productivity and efficiency, innovation

and creativity, motivation, and thinking and problem-solving abilities (Uysal, 2021). When asked whether the current educational system is adequate to teach 21st-century skills, the primary school teachers were asked one final question regarding it, and 20 out of 26 of them responded that they thought it was "insufficient". It is clear that the exam system is mostly to blame for this insufficiency. Teachers mentioned that they made an effort to implement skill-based activities but that the current educational system was insufficient for developing skills because of the intensity of the curriculum, the lack of resources or skill-based activities in the textbooks, and our understanding of measurement and evaluation, which is exam-oriented. Baras and Erdamar (2021) came to the same conclusions, finding that the repetition and outdated acquisitions; the low attractiveness of texts; the students' lack of critical thinking and problem-solving skills; the lack of physical infrastructure, material, and time; and the examination system's lack of a focus on measuring skills are the most significant issues encountered during the implementation of 21st-century skills. Cansoy (2018) said in his study that teachers hurry to impart knowledge since the educational system is mostly exam-focused, whereas 21st-century skills should be more student-oriented and used to reveal students' potential.

The second research title of the study is The Views of Primary School Teachers on the P21 Learning Framework." In this context, primary school teachers were asked about the skills in the P21 learning framework and examples of their lesson activities on the teaching of these skills within the framework of the 4th-grade social studies program. Primary school teachers were asked whether they had heard of the P21 learning framework before, and it was determined that they had not heard of it except for one person. Afterward, the P21 learning framework was introduced, and the skills in the framework were explained to the primary school teachers to inform them. In this context, the primary school teachers stated that they use these skills in their classrooms and social studies lessons when necessary. It was revealed that the primary school teachers reported that they mostly practiced critical thinking and problem-solving skills, followed by cooperation, communication, creative thinking, and innovation implementation skills, respectively, in the social studies course, among the 4C skills in the P21 framework. As an example of these, they mentioned that they included activities to develop critical thinking and problem-solving skills in students while teaching the subject of "Period of National Struggle", which is seen as one of the more difficult subjects in the 4th grade. In this context, the primary school teachers stated that they used the brainstorming technique and tried to comprehend the situation of our country after the First World War with the question of why. They stated that they worked with groups for the same outcome in terms of cooperation skills. When the literature is examined, it is stated that communication, cooperation, creativity, and critical thinking skills are frequently mentioned as 4C skills, especially critical thinking, which also benefits from other skills such as communication and information literacy skills and includes analysis, interpretation, and evaluation (Chiruguru, 2020). In the 21st-century context, communication refers not only to the ability to communicate effectively orally, in writing, and through various digital means but also to listening skills. Many international frameworks include information and digital literacy in the concept of communication (British Department for Education, 2013). In the 21st century context, collaboration is associated with the ability to work in teams, to learn from others and contribute to others' learning, to use social networking skills and technology, as well as the ability to show empathy when working with different people (Kaplan, 2023). In this study, the skill of creative thinking and applying innovation, which is among the 4C skills of the P21 learning framework, was the one that teachers developed the least. Creativity is seen as an important skill in the teaching-learning process because of its contribution to the individual's coping with complex problems, satisfaction with life, and progress in professional development (Tezci et al., 2008). Creative thinking is also associated with generating new ideas that can be applied to the world. The creative thinking process involves a sequential scientific process that starts with the definition of the problem and continues with the evaluation and monitoring of ideas to produce new information through information gathering, selection of concepts, and conceptual combination (Mumford et al., 2012). In this context, it can be concluded that creative thinking is a complex and high-level cognitive process. Teachers who can manage this process are needed in schools. Teachers who apply models such as project-based learning methods, problem-based learning methods, and active learning methods will be able to challenge students' cognitive processes in lessons, involve students in designing, problem-solving, decision-making, or conducting research activities, help them focus on complex tasks based on challenging questions or problems, and provide students with the opportunity to work for long periods of time. In this context, there is a need for teachers who can integrate these models into their lessons. However, according to the results of this study, teachers feel inadequate at "project management". Therefore, as a reflection of this result, it is expected that the skill of creative thinking and applying innovation in the social studies course is the one that teachers develop the least. Among the "Information, Media, and Technology" skills within the scope of the P21 learning framework, the primary school teachers reported that they mostly included skills to develop Information and Communication Technology literacy skills in the social studies course. This skill refers to the ability to use technology as a tool to research, organize, evaluate, and communicate information within the P21 framework and the ability to use digital technologies, networking tools, and social networks appropriately to access, manage, integrate, evaluate, and create information (Battelle for Kids, 2019). In this context, it is possible to say from the teachers'

statements that they can use technology as a tool to access information, but they are not active in integrating and creating information using digital tools. For this reason, although teachers see themselves as active in "Information and Communication Technologies Literacy", it is seen that they do not meet the qualifications specified within the scope of this skill in the P21 framework. Among the last steps of the P21 framework, "life and career skills", primary school teachers reported that they mostly practiced teaching social and intercultural skills. Social skills include understanding the feelings of others, developing empathy, learning the consequences of behavior, and understanding that others may have different opinions. These skills are also directly linked to communication, cooperation, and adaptability. Intercultural skills include understanding similarities and differences in others, understanding the cultures of others, and the ability to understand and appreciate one's own culture (P21 Early Childhood Framework, 2019). In this study, it is seen that the teachers generally attributed the reason for conducting activities related to social and intercultural skills to the presence of migrant children in their classrooms who took refuge in Turkey from Syria in 2011 due to the war. In 2011, due to the migration from Syria to Turkey, it was ensured that students learned Turkish on the one hand and continued their education in their language on the other in TECs (Temporary Education Centers). Then, in the 2015-2019 Strategic Plan, it was stated that the necessary equivalence studies should be carried out for the education received by the students in their home countries, and since 2018, refugee students have been gradually directed toward schools where Turkish students receive education (Meb, 2015; Özden, 2021). At this point, the initiative was left to the teachers, and as understood from this study, they tried to solve the adaptation problems with their own education and training approaches. The skills that teachers tried to develop the least were entrepreneurship and self-direction. Within the framework of the P21 framework, this skill involves developing the child's self-management, focus, perseverance, and ability to complete a task (P21 Early Childhood Framework, 2019). "Entrepreneurship" was identified as one of the skills in which teachers felt themselves most inadequate. In this context, it can be seen as an expected research finding that teachers cannot reflect the "Entrepreneurship" skill, which they see as a skill they do not have, to students through activities in their classrooms.

The third research topic of the study is the opinions of primary school teachers on the inclusion of skills in the social studies program. The teachers stated that they tried to provide all the skills in the social studies program (MEB, 2018), especially emphasized the importance of the brainstorming technique in teaching the skills of the social studies course in the 4th grade, and gave examples of making students question while gaining these skills and ensuring that they reach the achievement with guiding questions. Teachers stated that while teaching these skills, they enabled students to benefit from technology (by watching YouTube and EBA videos), had them do project work, had them do drama, taught lessons with songs, had them interview, had them do research, taught the lesson using concrete materials, and taught the lesson with the direct expression method. Çelik (2021) conducted a study with teachers to determine the activities carried out to acquire the skills in the social studies curriculum and the problems they experienced in the implementation of the curriculum. As a result of the study, teachers stated that the skills in the social studies curriculum (digital literacy, financial literacy, entrepreneurship, legal literacy, political literacy, and location analysis) were not adequately provided. It was found that there were not enough explanations and examples of activities, it was abstract for children, the time allocated to the lesson for the implementation of the program was not enough, there were problems in providing materials, and teachers were not sufficient in providing these skills. This situation supports the results of this study. Primary school teachers were asked the question, "Which of the skills in the Social Studies program do you think are dysfunctional? Explain with reasons by giving examples," and it was concluded that among the answers given, political literacy, financial literacy, and legal literacy skills were seen as dysfunctional the most. In this context, it is seen that the primary school teachers stated as a justification that the skills they expressed remain high-level skills when the grade and age levels of primary school children are considered. When the literature is examined, political literacy is seen as an important part of social studies and is expressed as knowing social decisions, expressing one's own opinions without being prejudiced against political views and differences of opinion, and having the ability to make political decisions (Political Literacy Within ITT Citizenship Education, 2002, as cited in Dağ & Koçer, 2019). Although the level of political knowledge is generally low among children, it is seen that boys are more successful in political awareness than girls (van Deth, Abendschön, & Vollmar, 2011, as cited in Dağ & Koçer, 2019). Political education is very important for a society to be composed of politically aware and sensitive citizens. Democracy education is one of the most important aspects of political education. For this reason, early ages are seen as the most appropriate age for equipping children with democratic content (Wallace, 2006: 14). However, how to do this is an important issue. Teachers stated that they generally had difficulties in this process and that they involved students in decision-making processes by having them elect a class president. Sample activities in the social studies program to help children acquire political literacy skills can guide teachers. In this context, the support of families is also undeniable. It can be ensured that political conversations are held within the family and that news programs on this subject are watched and discussed together. Financial literacy is associated with the acquisition of concepts such as income, expenditure, budget, production, distribution, consumption, and occupation in the 4th-grade social studies curriculum (MEB, 2018). Financial literacy can be seen as a basic life skill. It is a skill that

concerns people of all ages, from children deciding how to spend their pocket MEBy to young people entering the business world, from newlyweds buying their first homes to the elderly managing their retirement savings. Financial literacy supports individuals in making these decisions and managing themselves economically (OECD, 2017). Studies show that this skill can vary according to age and gender (Lusardi & Mitchell, 2007; Kadoya et al., 2018). According to these studies, men are more financially knowledgeable than women, and middle-aged people are more financially literate than younger and older people. Kadoya and Rahimhan (2020) stated in their study that men are more financially knowledgeable than women, but women show more positive results than men in terms of financial behavior and financial attitude. They also stated that middle-aged people in Japan are more financially knowledgeable, but younger and older people show more positive results in terms of financial behavior and attitude. Giving financial literacy skills to children at an early age will positively affect their future MEBy management skills and their ability to manage their financial decisions effectively. In this context, children can acquire basic MEBy management skills such as saving, budgeting, investing, spending, or debt management through concretization. For example, scenario software about an imaginary account opening or future retirement planning can be considered a start. In addition, teachers can be trained in financial literacy, or financial literacy education can be taught as an independent course in primary schools. In this study, legal literacy was also seen as a dysfunctional skill by teachers. However, when the literature is examined, the importance of legal literacy is emphasized in many ways. First of all, legal literacy enables citizens to defend their rights and follow legal processes. When children are informed about legal issues from an early age, they can take bold steps to protect their rights. It also contributes to ensuring justice and equality in society (Yadav & Yadav, 2021). Legal literacy includes not only knowledge of legal issues but also competencies such as understanding legal documents, interpreting legal terms, utilizing legal resources, following the legal system, and understanding legal processes (Romig & Burge, 2019). These topics appear to children as abstract concepts and can be considered difficult subjects since law uses a complex and technical language and requires prior knowledge to understand the legal system. It may seem like a subject that children do not directly encounter in their daily lives. It is therefore important to give children concrete examples that explain what the law is and why it is important. For example, the purpose of traffic rules is to prevent accidents and keep people safe. Concrete examples like these can help children better understand the concrete implications of the law. It is important to create in-class and out-of-class teaching and learning environments to contribute to concretization. Books, whiteboards, computers, and projection devices in the classroom; outside the classroom, activities such as participating in court environments in the courthouse and organizing trips to local government centers can be suggested (Oğuz, 2015). In the classroom, students can be informed about important concepts related to the legal system. For example, the meanings of terms such as "court", "prosecutor", and "judge" can be explained. After the explanation, students can be assigned different roles. For example, one student can act as a judge, another as a lawyer, and others as witnesses, and they can share this with the class in line with the prepared scenario. Discussion groups can be formed with students, and students can be supported to defend their opinions on a subject. Such examples of concretization will improve students' thinking skills and help them better understand legal issues. In this study, the question "Which of the 21st-century skills in the Social Studies program is more important for children's adaptation to the age?" was asked to the primary school teachers by MEB (2018), and among the answers given, digital literacy, problem-solving, and critical thinking skills were considered most important by the teachers in terms of children's adaptation to the age. The digital literacy skill is defined by UNESCO (2018) as the ability to access, manage, understand, integrate, communicate, evaluate, and create information securely and includes the competencies in "Information, Media and Technology" literacy in the P21 framework. Critical thinking and problem-solving skills are also among the "Learning and Innovation" skills among the 4C skills in the P21 framework. In this context, the results of the teachers also show consistency within themselves, and the teachers expressed the skills that they considered important for children within the P21 framework within the framework of the MEB (2018) social studies program. The majority of the primary school teachers stated that they did not find the achievements in the social studies program appropriate in terms of reflecting 21st-century skills and explained the reasons for this as the intensity of the curriculum, insufficient physical facilities, a lack of high-level skills in the achievements, and a lack of time. In this context, similar results in the literature are reached. In Demir and Özyurt's (2021) study titled "Examining the Social Studies Curriculum and Textbooks in the Context of 21st Century Skills", it was stated that the social studies curriculum is aimed at developing some of the 21st-century skills, but it does not cover all of the 21st-century skills.

Recommendations

In addition, there is not a balanced distribution in the curricula for the development of skills, and while many outcomes for the development of some skills are included in the program, some skills are not included in the curricula. In this context, the following suggestions are valid for the results of the study: It is stated what the basic skills are in the social studies program. The framework for competences and learning domains specifies

skills; however, it is not made clear which ability corresponds to which outcome. The program needs to reflect this circumstance more accurately. Additionally, teachers cannot successfully teach skills because there are no activity examples in the program. Within the context of success, illustrative exercises for each skill should be incorporated into the program. Within the parameters of the curriculum, more research should be done on both what to teach and how to educate. For the teaching of all these skills, it is crucial that current and future educators have better training and information on skill development, as well as access to materials or examples that are concrete for the acquisition of abstract or advanced abilities.

When high-level skills are examined separately, it is possible to include suggestions for teaching each skill. For example, for entrepreneurship skills, it can be suggested that teachers create an environment for students to take risks and realize their differences and innovations. Stone painting, ceramic painting, wood painting, egg painting, glass painting, etc. are obtained from art activities. Offering the products obtained with the materials for sale by the students and providing the opportunity to buy the materials that their classes need with the income obtained from the sale can be considered a start for entrepreneurial skills. In line with the achievements related to the professions in the life studies and social studies programs, it can be ensured that the occupational groups related to entrepreneurship and the people working in these professions meet with the students. It can be suggested that exemplary entrepreneurs share their experiences with students and become mentors to them. In the acquisition of legal literacy skills (rights, law, justice, etc.). Concretization of concepts is important. Drama can be used to realize this concretization, especially in younger age groups. By sharing roles such as prosecutor, judge, and lawyer, it is possible to focus on the solution of possible cases. Discussion groups can be formed with students, and students can be supported to defend their ideas on a subject. Examples of such embodiments will develop students' thinking skills and help them better understand legal issues. Financial literacy skills are among the skills that are difficult for teachers to acquire. In this context, basic money management skills such as saving, budgeting, investing, spending, and debt management can be gained through embodiment. For example, they may be asked to write a script for a fictitious account opening or future retirement planning. In addition, it can be recommended to give trainers training on financial literacy for teachers. Families can be supported to develop political literacy skills. They can have daily news watching or newspaper reading activities at home. Topics that create the agenda in classes can be included in the social studies course.

It is suggested that in order to acquire 21st-century skills, traditional teaching methods be abandoned and that teachers be given incentives and resources to devote enough time to eTwinning, Scientix, and FCL activities where project-based models can be realized within the framework of the European School Network. It is advised in this situation to use evaluation tools that will aid students' project work rather than the conventional exam approach for skill assessment.

Conflicts of Interest

The author declares that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. The corresponding author carried out the entire research process. The author has no conflict of interest to disclose.

Ethical Approval

Ethical permission (12.05.2023, number:E-19928322-900-257575-2023/03) was obtained from Balıkesir University Ethics Committee for this research.

References

Akyürek, Ç., & Şahin, Ç. (2013). İlkokul öğretmenlerinin girişimcilik becerisine ilişkin görüşlerinin değerlendirilmesi [Evaluation of elementary teachers'entrepreneurship skills]. *EKEV Akademi Dergisi*, (57), 51-68. Retrieved from https://dergipark.org.tr/tr/pub/sosekev/issue/71342/1145740

Baras, M. & Erdamar, G. (2021). 2018 Ortaokul Türkçe Dersi Öğretim Programının 21. yüzyıl Becerileri Açısından İncelenmesi: Öğretmen Görüşleri [Analysıs of 2018 secondary school turkısh course program ın terms of 21st century skılls: teachers opınıons]. *Bolu Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 21(1), 222-242.

Battelle for Kids. (2019). *Framework for 21st century learning definitions.* (04.04.2023) Retrived from https://static.battelleforkids.org/documents/p21/P21_Framework_DefinitionsBFK.pdf

Benek, İ. (2019). Sosyobilimsel stem etkinliklerinin öğrencilerin tutumlarına ve 21. yüzyıl becerilerine etkisinin ıncelenmesi. [Examınatıon of the effect of socıoscıentıfıc stem's actıvıtıes on students' attıtudes and 21st centry skılls] (Publication No. 611696) [Doctoral dissertation, İstanbul University]. Turkey Dıgıtal Theses database.

Berk, E. (2009). Girişimcilik dersinin etkililiğinin değerlendirilmesi. Ankara: Milli Eğitim Bakanlığı EARGED.

Beyaztaş, D.İ. (2017). Sınıf eğitimi öğrencilerinin İngilizce öğretimine yönelik özyeterlik inançları[Self-Efficacy beliefs of students of primary education towards teaching english]. *Erzincan Üniversitesi Eğitim Fakültesi Dergisi*. 20 (1), 265-280.

Britanya Ministry of Education (2013). Defining Cross-Curricular Competencies Transforming Curriculum and Assessment.(01.02.2023). Retrieved from https://www.bced.gov.bc.ca/irp/docs/def_xcurr_comps.pdf.

Cansoy, R. (2018). Uluslararası çerçevelere göre 21. yüzyıl becerileri ve eğitim sisteminde kazandırılması [21st century skills according to ınternational frameworks and building them in the education system] İnsan ve Toplum Bilimleri Araştırmaları Dergisi, 7(4), 3112-3134.

Carneiro, R., & Draxler, A. (2008). Education for the 21st century: lessons and challenges. *European Journal of Education*, 43(2), 149-160.

Chiruguru, S. B. (2020). The essential skills of 21st century (4Cs). (01.02.2023). Retrieved from https://doi.org/10.13140/RG.2.2.36190.59201.

Christensen, B. L., Johnson, R. B., & Turner, L. A. (2015). *Research methods, design and analysis* (12th Edt.). Harlow: Rearson Education Limited.

Çelik, Y. (2021). Sosyal bilgiler programında yer alan bazı becerilerin kazandırılmasına yönelik öğretmen görüşleri [Teachers' views regarding the acquisition of some skills in the social studies curriculum]. *Yüzüncü Yıl Üniversitesi Eğitim Fakültesi Dergisi*, 18(1), 733-765.

Creswell, J. W.(2018) *Nitel Araştırma Yöntemleri*. Mesut Bütün - Selçuk Beşir Demir (ed.). (çev.) Osman Birgin vd. Ankara: Siyasal Kitabevi, 4. Basım.

Dağ, N., & Koçer, M. (2019). Türkiye'de politik okuryazarlık [Political Literacy in Turkey]. *OPUS Uluslararası Toplum Araştırmaları Dergisi*, 13(19), 2150-2175. DOI: 10.26466/opus.567352

Demir, A. Y., & Özyurt, M. (2021). Sosyal bilgiler dersi öğretim programı ve ders kitaplarının 21. yüzyıl becerileri bağlamında incelenmesi [Investigation of social studies curriculum and coursebooks in the context of 21st century skills]. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, 22(2), 1254-1290.

Doğan, E. (2020) *Ortaöğretim Programlarına 21. Yüzyil Becerilerinin Yansimasi ve Öğretmenlerin Bu Becerilere İlişkin Görüşleri (Ankara İli Örneği)*, [Reflectıon of 21th century skılls to secondary educatıon programs and teachers 'opınıons related to these skılls (Ankara province example)] (Publication No. 640167) [Unpublıshed Master dissertation, Gazi University]. Turkey Digital Theses database.

Framework for 21st Century Learning (25.09.2022) Retrieved from http://www.p21.org/our-work/p21-framework

Genç, G. & Kaya A. (2011). Sınıf öğretmeni adaylarının yabancı dil derslerine yönelik tutumları ile yabancı dil akademik başarıları arasındaki ilişki [The relationship between foreign language achievement and attitudes towards english courses of prospective primary school teachers]. *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*. 14 (26), 19-30.

Gelen, İ. (2017). P21-Program ve öğretimde 21. yüzyıl beceri çerçeveleri (ABD Uygulamaları)[P21- 21st Century skill frameworks in curriculum and ınstruction (USA practices)]. *Disiplinlerarası Eğitim Araştırmaları Dergisi*, 1(2), 15-29.

Gönül, S. (2020). Sınıf öğretmenlerinin ilkokullardaki yabancı dil öğretimine ilişkin görüşleri. [Class teachers' vıews on foreıgn language teachıng ın prımary schools] (Publication No. 636468) [Unpublıshed Master dissertation, Yıldız Technical University]. Turkey Digital Theses database.

Hamarat, E. (2019). *21. Yüzyıl Becerileri Odağında Türkiye'nin Eğitim Politikaları*. İstanbul: Seta Yayıncılık.

Kaplan, Z. (2023) *What Are Collaboration Skills? Definition and Examples* (04.03.2023). Retrieved from https://www.theforage.com/blog/skills/collaboration-skills

Kadoya, Y., & Khan, M. S. R. (2020). Financial Literacy in Japan: New Evidence Using Financial Knowledge, Behavior, and Attitude. Sustainability, 12(9), 3683. MDPI AG. Retrieved from http://dx.doi.org/10.3390/su12093683

Kadoya, Y.; Khan, M.S.R.; Hamada, T. & Dominguez, A. (2018) *Financial Literacy and Anxiety About Life in Old Age: Evidence from the USA*. Rev. Econ. Househ. 16, 859–878.

Kılıç, A. (2022). Türkiye Yükseköğretim Yeterlilikler Çerçevesi Lisansüstü Düzey Tanımlarının P21'in 21. Yüzyıl Beceri Tasnifi Kapsamında Değerlendirilmesi [An evaluatıon of turkısh hıgher educatıon qualıfıcatıons framework graduate level defınıtıons wıthın the 21st century skılls classıfıcatıon of p21]. *Eğitimde Yeni Yaklaşımlar Dergisi*, 5(2), 66-83.

Lusardi, A.; Mitchell, O.S. (2007) Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education. *Bus. Econ.*, 42, 35–44.

MEB (2011) *MEB 21. Yüzyıl Öğrenci Profili*, Ankara:Milli Eğitim Basımevi.

MEB (2015). MEB stratejik plan (2015-2019). (05.04.2023) Retrieved from http://sgb.meb.gov.tr/meb_iys_dosyalar/2015_09/10052958_10.09.2015sp17.15.

MEB (2018) Sosyal Bilgiler dersi öğretim programı. Ankara: Devlet Kitapları Basım Evi.

Merriam, S. B. (2018). *Nitel araştırma: Desen ve uygulama için bir rehber*. S. Turan (Çev. Edt.). Nobel Yayınevi.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.

Moustakas, C. (1994). *Phenomenological research methods*. Sage publications.

Mumford D.M., Medeiros K. & Partlow J. P. (2012) Creative Thinking: Processes, Strategies, and Knowledge *The Journal of Creative Behavior*. 46 (1) p.30–47.

NCSS (2023) National Standards for Social Studies Teachers.(19.02.2023)The United States of America.Retrieved from https://www.socialstudies.org/standards

OECD (2017). PISA 2015 Results (Volume IV). Students' Financial Literacy. Paris: OECD Publishing. (November 11, 2022) Retrieved from http://dx.doi.org/10.1787/9789264270282-en

Oğuz, S. (2015). Sosyal bilgiler eğitiminde hukuksal mekânlara dayalı öğrenme ortamları. R. Sever ve E. Koçoğlu (Ed.) Sosyal bilgiler eğitiminde mekânlara dayalı öğrenme ortamları (s.157-180). Ankara: Pegem

Özden, F. (2021). Mülteci Öğrencilerin Okula Uyum Süreçlerine Yönelik Gerçekleştirilen Eğitsel Etkinliklerin İncelenmesi. [Investıgatıon of educatıonal actıvıtıes performed for the adaptatıon process of refugees to school students] (Publication No. 675729) [Unpublıshed Master dissertation, İstanbul Sabahattin Zaim University]. Turkey Digital Theses database.

Partnership for 21st Century Skills. (2015). P21 framework definitions. (07.02.2023) Retrieved from https://files.eric.ed.gov/fulltext/EJ1215540.pdf

P21Early Childhood Framework (2019). 21st century learning for early childhood framework. Partnership for 21st century learning. A network of Battele of Kids (08.03.2023). Retrieved from http://static.battelleforkids.org/documents/p21/P21EarlyChildhoodFramework.pdf

Romig, J. M. & Burge, M. E. (2019) *Legal Literacy and Communication Skills: Working with Law and Lawyers* (Chapter 1) (November 22). Carolina Academic Press, 2020, Texas A&M University School of Law Legal Studies Research Paper No. 19-66, Retrieved from https://ssrn.com/abstract=3491498

S. Vasanthakumari. (2019). Soft skills and its application in work place. *World Journal of Advanced Research and Reviews*, 3(2), 66-72.

Şentürk, Y. (2021). *Girişimcilik becerisi kazandırmada öğretim materyali geliştirme ve kullanılabilecek öğretim yöntem ve tekniklerini belirleme hakkında sosyal bilgiler öğretmenlerinin görüşleri (Bursa ili örneği)* [Opınıons of socıal studıes teachers about developıng the teachıng method and technıque whıch can be used and developıng teachıng materıal whıle gaınıng entrepreneurshıp skılls (Bursa provınce example)] (Publication No. 690553) [Doctoral dissertation, Uludağ University]. Turkey Digital Theses database.

Türkiye Yeterlilikler Çerçevesinin Uygulamasına İlişkin Usul ve Esaslar Hakkında Yönetmelik, (09.11.2022). Retrieved from http://www.mevzuat.gov.tr/MevzuatMetin/3.5.20158213.pdf

UNESCO (2018). *A global framework to measure digital literacy* (01.02.2023) Retrieved from http://uis.unesco.org/en/blog/global-frameworkmeasure-digital-literacy.

Uysal, Ö. (2021). Proje tabanlı öğrenme ile kazanılan 21. yüzyıl becerilerine yönelik bir nitel araştırma [A qualitative research on 21st century skills acquired by project based learning]. *Uluslararası Bilim ve Eğitim Dergisi*, *4*(2), 85-110.

Vivekanandan, R. (2019). Integrating 21st century skills into education systems: From rhetoric to reality. *Education Plus Development*.

Yadav, M.& Yadav, S.(2021) International Journal of Law Management and Humanities, Volume 4, Issue 3, Page 46 – 50, (01.02.2023) Retrieved from http://doi.one/10.1732/IJLMH.26698

Yell, M. M., & Box, J. (2008). Embrace the future: NCSS and P21. *Social Education*, *72*(7), 347-349.

Yıldırım, A.& Şimşek, H. (2006). *Sosyal bilimlerde nitel araştırma yöntemleri,* (5. Baskı) Ankara: Seçkin Yayıncılık.

Wallace, M. (2006). *Social Studies All Day, Every Day In The Early Childhood Clasrroom*. Canada: Cengage Learning.

Developing Digital Content Production Skills for Mother Tongue Teaching with Web 2.0 Tools in Teacher Education: An Action Research

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Abstract

Today, it is widely acknowledged that the use of the Internet and the development, production, and sharing of content over the web have become widespread. Web technologies that provide these conveniences are commonly referred to as Web 2.0 tools. This study aims to develop the skills of pre-service teachers who will teach Turkish as a mother tongue to produce digital content for mother tongue teaching with Web 2.0 tools. The research was conducted using action research, one of the qualitative research methods. The participants developed their digital content production skills through the research using many different Web 2.0 tools. With these different Web 2.0 tools, the participants developed instructional content such as puzzles, online quizzes, presentations, video preparation and editing, blogs and websites, and concept maps. The various digital contents developed by the participants with different Web 2.0 tools are digital teaching materials for reading, writing, listening, watching, and speaking skills that form the basis of mother tongue teaching. The participants' thoughts about feeling inadequate about Web 2.0 tools before the implementation changed after the implementation. The participants could produce content with Web 2.0 tools, improve their teaching skills, and benefit from these tools in their teaching practicum.

Keywords: Web 2.0 tools, teacher education, digital skills, teaching Turkish as a mother tongue, action research

Introduction

It is a known fact that digital technologies are taking more and more place in people's lives. Education systems have also been affected by technological developments. As a result of this influence, the technologies used in the field of education have been conceptualized as instructional technologies and evolved into web-based teaching with the widespread use of the internet. Today, it is known that internet use and, accordingly, the development, production, and sharing of content on the web have become widespread.

The development of web technologies is evaluated in five categories: Web 1.0, Web 2.0, Web 3.0, Web 4.0, and Web 5.0 (Rani, Das, & Bhardwaj, 2022). Today, one of the most important teaching elements based on web technologies are web 2.0 tools. The term Web 2.0, first used by Tim O'Reilly in 2004, has emerged as a communication-based system where users can not only obtain information but also create and share information (Conole & Alevizou, 2010; Akman, 2022). Since 2004, various Web 2.0 technologies have been rapidly gaining prevalence in people's daily lives (Luo, 2013).

Web 2.0 technologies have changed the habits of using the Internet. With Web 2.0 tools, the Internet has ceased to be an environment where information is prepared and transmitted, and ready-made information is consumed. It has become a platform where content is produced, shared, combined, and transferred among the participants (Horzum, 2010). With these features, Web 2.0 technologies are defined as technologies that enable users to produce and share content and work in collaboration with other users (Franklin & Van Harmelen, 2007). Web 2.0 tools represent the second generation of web pages that facilitate communication, provide secure content, and enable online collaboration (Alexander, 2006). These tools offer opportunities such as communication, interaction, information sharing, easy access to information, collaborative content creation, content storage and sharing, evaluation, and visualization in a simple and easy way for all levels of participants (Ajjan & Hartshorne, 2008).

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Elmas and Geban (2012) grouped Web 2.0 tools as content management systems, online meetings, online storage and file sharing, online surveys, concept map and drawing tools, animation and video, word clouds, and interactive presentations. In terms of purposes of use, Web 2.0 tools include classroom management, organizing meetings and conferences, discussion (synchronous and asynchronous), creating concept maps and flowcharts, creating graphics (posters, infographics, cartoons, and maps), creating videos, interactive videos, and animations, creating digital stories, creating e-books and z-books, creating surveys, tests, and puzzles, assessment and evaluation, virtual reality and augmented reality tools, presentation tools, building websites and blogs, file sharing, creating online collaborative workspaces, and 3D modeling (Akman, 2022). The areas of use of Web 2.0 tools and the conveniences they provide are also helpful for education. In terms of usage areas, it can be said that Web 2.0 tools offer many options and conveniences for teachers and students to prepare, share, and use content because Web 2.0 tools support learning thanks to their accessible, personal, and portable features in terms of time and space (Cheung & Hew, 2009). These applications provide students with new environments for inquiry-based and exploratory learning (Conole & Alevizou, 2010), as well as learning environments that enable students to be collaborative and active beyond traditional learning environments (Clements & Boyle, 2018). Luo (2013) states that the benefits of Web 2.0 tools for learning are that they promote affective learning, enhance collaborative learning, foster a learning community, increase learning performance, and support metacognitive learning. With these features, Web 2.0 tools can be utilized in teaching different courses (Rich, 2008). Balbay and Erkan (2018) state that Web 2.0 tools support students' autonomous learning in language teaching, so autonomous learning skills can be developed using these tools.

There are many studies on the use of Web 2.0 tools for pre-service teachers, teachers, and students (Almalı & Yeşiltaş, 2020; Conole & Alevizou, 2010; Coutinho, 2008; Girgin, 2011; Sadaf, Newby, & Ertmer, 2012; Süğümlü & Aslan, 2022; Yıldırım, 2020). These studies contribute to the quality of learning and teaching processes by guiding both teachers and students to improve their digital skills. In this framework, it is important for future teachers and teachers to know and use Web 2.0 tools in their lessons because one of the competencies expected from future teachers and teachers is to have digital skills. These skills should be provided to future teachers in teacher education.

UNESCO (2008), in its "Information and Communication Technologies Competency Framework for Teachers" report, states that individuals should be prepared to acquire skills such as using information technologies, searching, analyzing, and evaluating information, problem-solving and decision-making, and creative and effective use of productivity tools. Educational institutions and teachers are responsible for preparing individuals for life with these skills. The European Commission (2010), in its report "The Future of Learning: Visions of European Teachers," states that technology will be an integral part of learning and that teachers will be lifelong learners. As the most important resource in schools, teachers are critical to raising educational standards. To a large extent, improving education efficiency and equity depends on ensuring that teachers are highly skilled, well-resourced, and motivated to do their best (OECD, 2009).

One of the skills that teachers should possess is digital competence. In the 2023 Education Vision Document, the Ministry of National Education (MoNE, 2018) states that future teachers should have a culture of using and developing digital content effectively. In addition, effective use of information and communication technologies has been identified as a teacher competency criterion in the Framework of General Teacher Competencies (MoNE, 2017). Digital competence is included among the critical competencies in curricula, and digital competence is associated with the use of computers, information communication technologies, and the internet (Bağcı Ayrancı & Süğümlü, 2021; MoNE, 2019). In its "Teacher Competencies" report, the Turkish Education Association (2009) states that a maximum of 5% of teachers can be trained each year with the current in-service training budget. With the same budget, all teachers can create and access an interactive web-based training model. When all of these are evaluated, it becomes clear that pre-service teachers in teacher education should be familiar with internet-based technologies and trained with the skills to use them effectively in the teaching process. This means that Web 2.0 technologies should be learned by teachers and future teachers and used in their teaching processes. Using these web tools, especially in core areas such as language teaching, should be seen as as important as supporting other teaching areas.

Today, it is essential for the education system to guide individuals to utilize digital technologies safely and correctly (Hague & Payton, 2010). The person who will provide this guidance in the education system is the teacher. In this case, it is necessary to provide teacher training to utilize digital technologies in the course teaching processes and to include students in the learning process with Web 2.0 tools. Karakuş and Er (2021), in a study conducted with pre-service Turkish teachers in Turkey, determined that Web 2.0 tools are not well known by future teachers and emphasized the importance of conducting studies on this subject. Ajjan and

Hartshorne (2008) stated in their study that although the lecturers who teach at the faculty think that Web 2.0 tools are useful for teaching and learning, very few use them in the classroom. Another study determined that language instructors' attitudes towards these tools increased at the end of training on using Web 2.0 tools (Balbay & Erkan, 2018). Another study shows that students (digital natives) in foreign language learning use Web 2.0 tools frequently and are assertive and practical in producing content and sharing it through links (Bozna & Yüzer, 2020). Considering the opportunities offered by Web 2.0 tools and applications for students and teachers, it is vital to conduct research based on experiences to improve teachers' and students' skills in using these tools. For this reason, the knowledge and effective use of Web 2.0 tools by native and foreign language teachers will support students' language and cognitive skills.

Mother tongue helps children develop high levels of creativity and sensitivity (Ofosu, Mahama, Vandyck, Kumador, & Toku, 2015). Teaching Turkish as a mother tongue is a multifaceted field that aims to develop both language and mental skills. The development of students' language and cognitive skills also supports the development of their skills in other courses. In the development of language and mental skills, there is a need to use interactive and versatile digital tools. For this reason, it is important to develop the skills of preservice Turkish teachers, who will be the future Turkish teachers, to produce digital content with Web 2.0 tools for Turkish lessons. When the materials used in teaching Turkish as a mother tongue are examined, it is seen that digital contents are more than printed contents (Tekşan & Çinpolat, 2021). For this reason, knowing and using Web 2.0 tools and preparing teaching content have an important place in digital content production. The use of many Web 2.0 tools by Turkish teachers in the context of teaching strategies, methods, and techniques will increase the quality of teaching Turkish as a mother tongue (Süğümlü & Tekşan, 2022).

As a result of the literature review, the reasons for conducting the research are that there is no applied research on developing digital content related to mother tongue teaching with Web 2.0 tools in teacher education in Turkey and that the researcher observed that the digital content production skills for mother tongue teaching of the Turkish teachers were not sufficient during the teaching process and in the different courses they gave for mother tongue teaching for five years at the university where they worked for the pre-service Turkish teachers. It is thought that this study will contribute to the use of technology in education among teachers who teach mother tongue, pre-service teachers, instructors, and graduate students who study the use of technology in education. In addition to these, this study will also contribute to the training of the participants as individuals who can easily adapt to technology and use new technologies effectively in their professional lives after they become teachers. In this context, the research aims to improve the skills of pre-service Turkish teachers to produce digital content for Turkish language courses with Web 2.0 tools. In the context of this main purpose of the research, answers to the following research questions were sought:

- Which Web 2.0 tools did the participants use to produce digital content?
- Which digital content did the participants produce with Web 2.0 tools?
- Which language skills and topics did the participants' digital content address?
- What are the participants' opinions about producing digital content with Web 2.0 tools before and after the application?
- Did the application increase the participants' competencies in using Web 2.0 tools?

Method

Research Design

The research was conducted using action research, one of the qualitative research methods. Action research involves process-based research. In this process, data are collected and analyzed systematically, and the analyzed data are presented as feedback to the participants. Thus, action plans are systematically developed (Derince & Özgen, 2017). Action research is a process in which positive change is targeted through qualitative methods to understand the effects of educational interventions made by teachers and administrators on students in schools and classrooms (Mills, 2003). In the action research process, problem determination, data collection, data analysis, determining an action plan, realizing the action, and deciding on an alternative or new action (Yıldırım & Şimşek, 2013). The researcher aimed to develop the participants' digital content production skills needed in the teaching process in a real school environment based on the problem situation he determined. The action plan prepared for this purpose is shown in Figure 1.
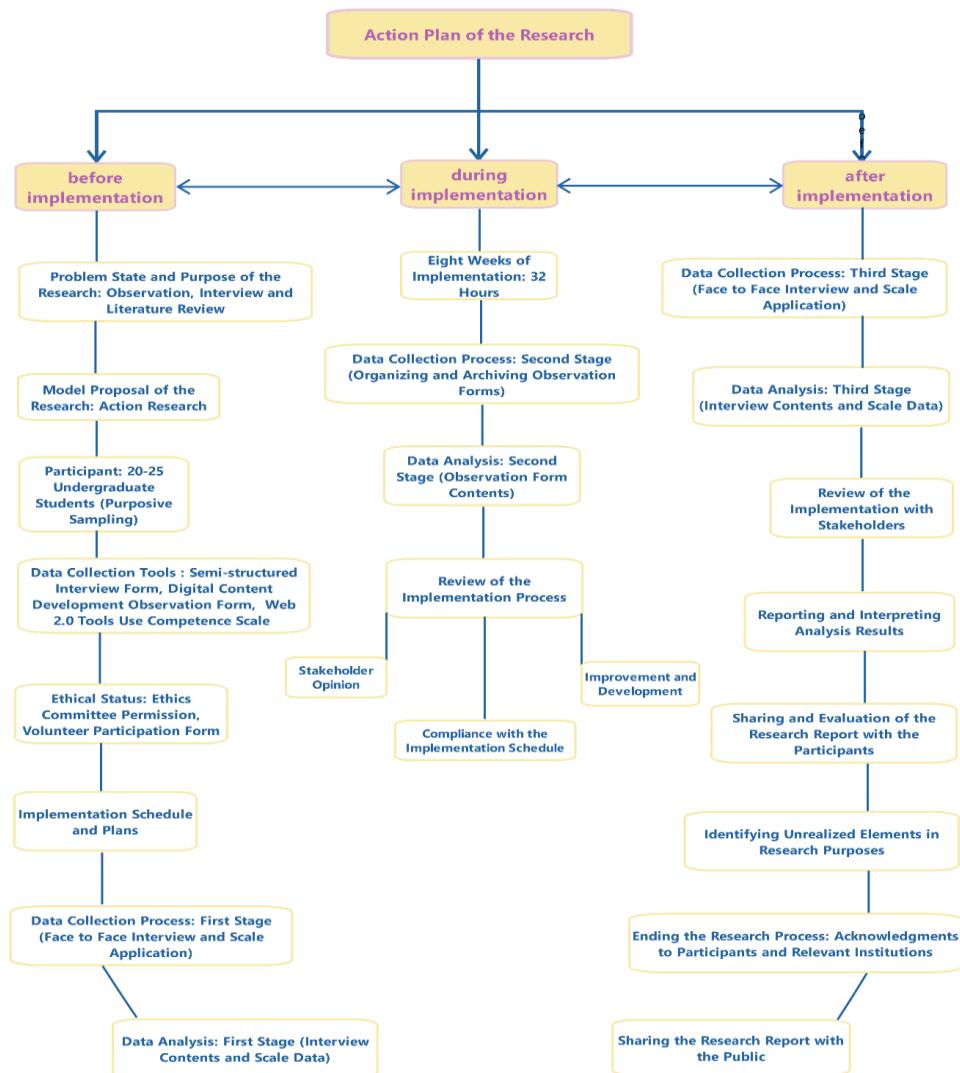
Figure 1. Action Plan of the Research

Participants

The participants of the study consisted of 21 students who were selected according to the principle of volunteerism and the sampling method of the study among the senior students studying in the Department of Turkish Language Teaching in the Faculty of Education at a state university in the spring semester of the 2021–2022 academic year. Purposive sampling, one of the non-probability sampling methods, was used to determine the participants of the study. To better serve the purpose of the study, the participants were selected among those who had not used Web 2.0 tools before and who considered themselves inadequate in preparing digital content. 11 (52.4%) of the participants were female, and 10 (47.6%) were male pre-service teachers. Participants were coded as P1, P2, P3,... P21.

Data Collection Tools

Creswell (2017) states the types of data collection in qualitative research as observation, interview, document, and audio-visual materials. The study used a semi-structured interview form developed by the researcher and Digital Content Development Observation Form as qualitative measurement tools. However, qualitative and quantitative data are used together in action research to provide data diversity (Creswell, 2012; Johnson, 2005). In this framework, the Web 2.0 Tools Use Competence Scale (Çelik, 2020) was also used to provide data diversity. The data collection tools used in the study and the relationship between these tools and the research questions are shown in Figure 2.
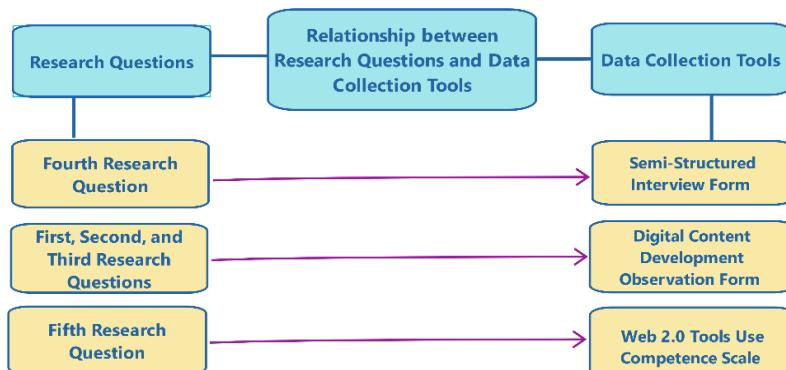
Figure 2. Relationship between research questions and data collection tools

Before using the semi-structured interview form, one of the data collection tools of the research, a validity study was conducted to determine whether the questions in the form were adequately related to the research purpose and questions. Within the scope of the validity study, the opinions of three field experts were taken, and the interview form was finalized by editing the questions in line with the opinions received. After the Digital Development Observation Form, another data collection tool for the research was prepared; it was shown to three field experts for its suitability to the research purpose and questions, and the observation form was finalized in line with the opinions of the field experts. The Digital Content Development Observation Form consists of two parts. The first part includes the language skills and topics related to the developed digital content; the second part includes the Web 2.0 tool used in creating the developed digital content, the content development process, and the visuals of the developed content.

To ensure the inclusion of a diverse range of data in the study, the Web 2.0 Tools Use Competence Scale developed by Çelik (2020) was used as a quantitative data collection tool. The scale, which was designed to determine the competence of teachers and pre-service teachers in using Web 2.0 tools, was prepared in a five-point Likert type. The five-point scale is stated as follows: never (1), rarely (2), sometimes (3), frequently (4), and always (5). Exploratory Factor Analysis, Confirmatory Factor Analysis, item analysis, Total Item Correlation, and Cronbach Alpha tests were applied in the scale development process. The Cronbach's Alpha reliability coefficient of the scale was found to be .98. After the validity and reliability analyses, it was stated that the scale, which was prepared with 50 items, was a valid and reliable scale with 39 items and a unidimensional structure.

Data Collection

The implementation of the study was completed in eight weeks. Data were collected in three stages: before, during, and after the implementation. Interviews with the participants for the questions in the semi-structured interview form, one of the data collection tools of the research, were conducted in two stages. In the first stage, face-to-face interviews were conducted with the participants before the start of the training. In the first interview, the researcher asked the participants about their views about using Web 2.0 tools and their expectations from the research.

In this way, it was aimed at reflecting the thoughts and expectations of the participants in the research process. In the second stage, after completing the eight-week implementation process, the participants were re-interviewed face-to-face. In the last interview, the participants were asked about their thoughts on developing digital content with Web 2.0 tools. Thus, it was tried to determine how the participants' learning experiences were reflected in their thoughts. Finally, with the Digital Content Development Observation Form, another data collection tool for the research, the studies for each application of the research were reported after the research process started. Reporting was done separately for each participant. The researcher made observations as a participant. To ensure data diversity in the study, the Web 2.0 Tools Use Competence Scale was applied to determine the participants' use of Web 2.0 tools before starting the applications. The same scale was reapplied to the participants at the end of the application. Thus, it was tried to determine whether there was an improvement in the participants' competencies in using Web 2.0 tools. Thus, data were collected with three data collection tools in accordance with the research action plan, and the data collection process was finalized. The data collection process for the research is shown in Figure 3.
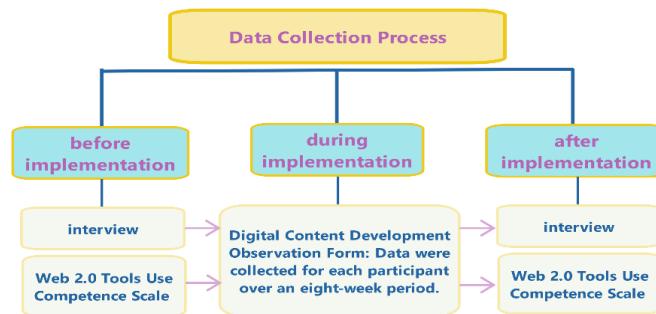
Figure 3. Data collection process

Data Analysis

Two types of analysis were conducted in the research. First, content analysis was used for qualitative data, and descriptive analysis was used for quantitative data. Categorical content analysis, one of the types of content analysis, was used to analyze qualitative data. Categorical content analysis, one of the types of content analysis, was used to analyze qualitative data. In categorical analysis, data are first coded, categories are created and organized, and in the last stage, the findings obtained are defined and interpreted (Robson, 2017). The study's qualitative data were transferred to the MAXQDA 20 qualitative data analysis program, and analysis procedures were carried out through the program. Within the framework of content analysis, firstly, coding was done separately, and themes were formed by combining these codes. After the coding was done, the agreement between the codes was checked. There was no discrepancy between the codings performed by the researcher based on the code-recode technique. In addition, in the study, direct transfer statements for the codes were included to ensure the reliability of the data analysis. Finally, the data analysis findings were presented with visuals obtained from the program. In addition, the frequency of each code was included in the visuals. The fact that the lines between the theme and the codes in the visuals are thick or thin indicates the intensity or redundancy of the participant's expressions in the relevant code. In the descriptive analysis of quantitative data, one of the most general procedures is to calculate the measures of central tendency (Kilmen, 2022). The mean scores of the participants' competence in using Web tools were calculated before and after the application. The results of the description of the data are shown in the table. The participants' mean scores before and after the implementation were evaluated according to the statements never, rarely, sometimes, frequently, and always.

Research Ethics

Ethical elements were complied with in the research process. Participants attended the research according to the principle of voluntariness. The entire research process was explained to the participants, and it was stated that they could leave the study at any time during the process. No personal information was used in the research, and codes were given to the participants. The entire research process was carried out according to the codes. The information about the institution where the research was conducted was also kept confidential, and the institution's name was not included in the research report. Therefore, the necessary ethical approval was obtained from the relevant institution's Social and Human Sciences Research Ethics Committee (Ordu University, 30.03.2022, 2022–40) for the research.

Results

Web 2.0 Tools Used to Produce Digital Content

The codes that emerged in the theme of Web 2.0 tools used to produce digital content during the implementation and the frequency of these codes are shown in Figure 4.
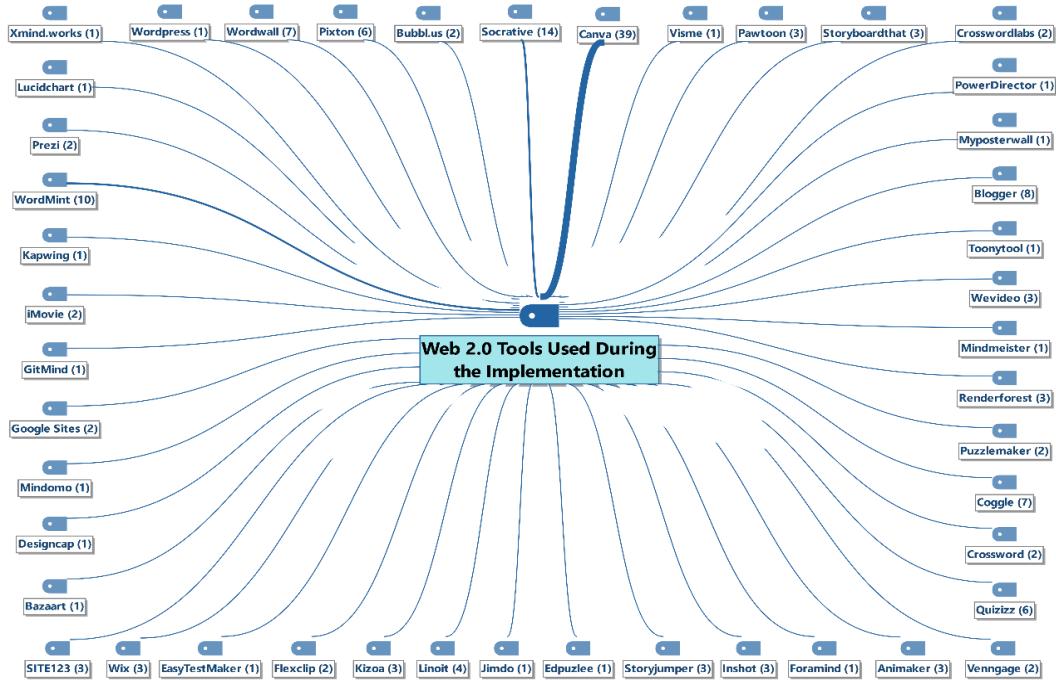
Figure 4. Web 2.0 tools used during the implementation

Figure 4 shows that the participants used Lucidchart, Kapwing, iMovie, GitMind, Wordpress, Mindomo, Google Sites, Bazaart, Designcap, Wix, Flexclip, EasyTestMaker, Kizoa, Linoit, Jimdo, Edpuzlee, Visme, Storyjumper, SITE123, Xmind.works, WordMint, Pawtoon, Storyboardthat, Crosswordlabs, Myposterwall, Inshot, Foramind, Animaker, Venngage, Quizizz, Crossword, Coggle, Puzzlemaker, Renderforest, Mindmeister, Wevideo, Toonytool, Blogger, PowerDirector, Prezi, Canva, Socrative, Bubbl.us, Pixton, and Wordwall Web 2.0 tools. The participants used 46 different Web 2.0 tools during the implementation and mainly used *Canva* (39), *Socrative* (14), and *WordMint* (10) Web 2.0 tools to produce digital content. These findings show that the participants learned many different Web 2.0 tools during the implementation and developed their skills in creating digital content with these tools.

Types of Digital Content Produced with Web 2.0 Tools

The codes that emerged in the theme of digital content types produced for mother tongue teaching with Web 2.0 tools during the implementation, the frequency of the codes, and the participants in the codes are shown in Figure 5.
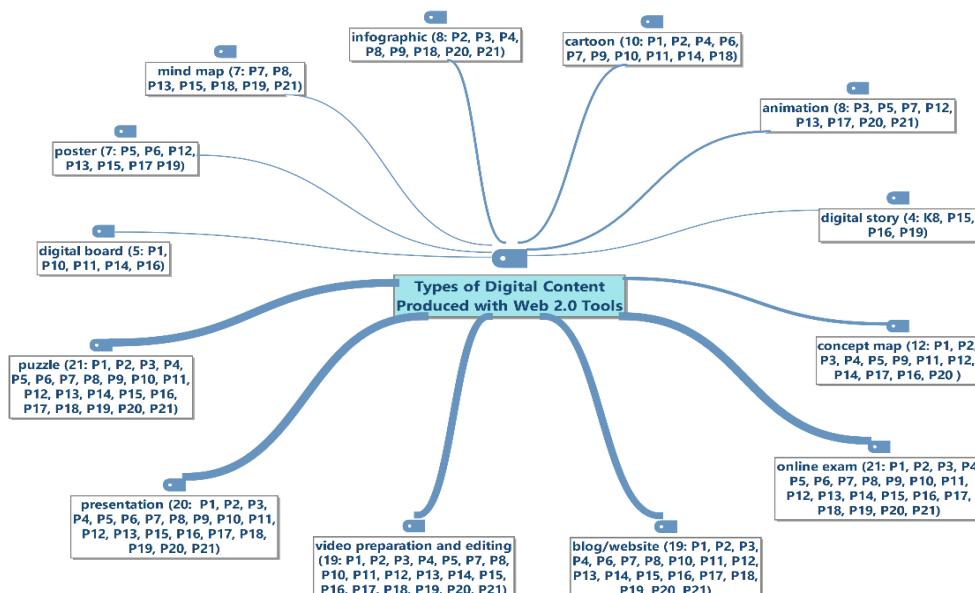
Figure 5. Types of digital content produced with Web 2.0 tools

As is shown in Figure 5, the codes in the theme of digital content types for mother tongue teaching produced with Web 2.0 tools during the application are infographic, cartoon, animation, digital story, concept map, mind map, online exam, blog or website, video preparation and editing, presentation, puzzle, digital board, and poster. In addition, participants were able to develop instructional content for mother tongue teaching in 13 different types of digital content during the implementation. Among these content types, puzzles (21), online quizzes (21), presentations (20), video preparation and editing (19), blogs and websites (19), and concept maps (12) were produced the most. These findings show that the participants could produce different digital content for mother tongue teaching with Web 2.0 tools during the implementation. In addition, the application contributed to the development of the participants' animated-motionless visual design skills, interactive-non-interactive content production skills, and digital sharing skills.

Language Skills and Topics Related to the Digital Content Produced

Figure 6 shows the codes that emerged in the theme of language skills and topics related to the digital content produced for mother tongue teaching with web 2.0 tools during the implementation and the frequency of these codes.
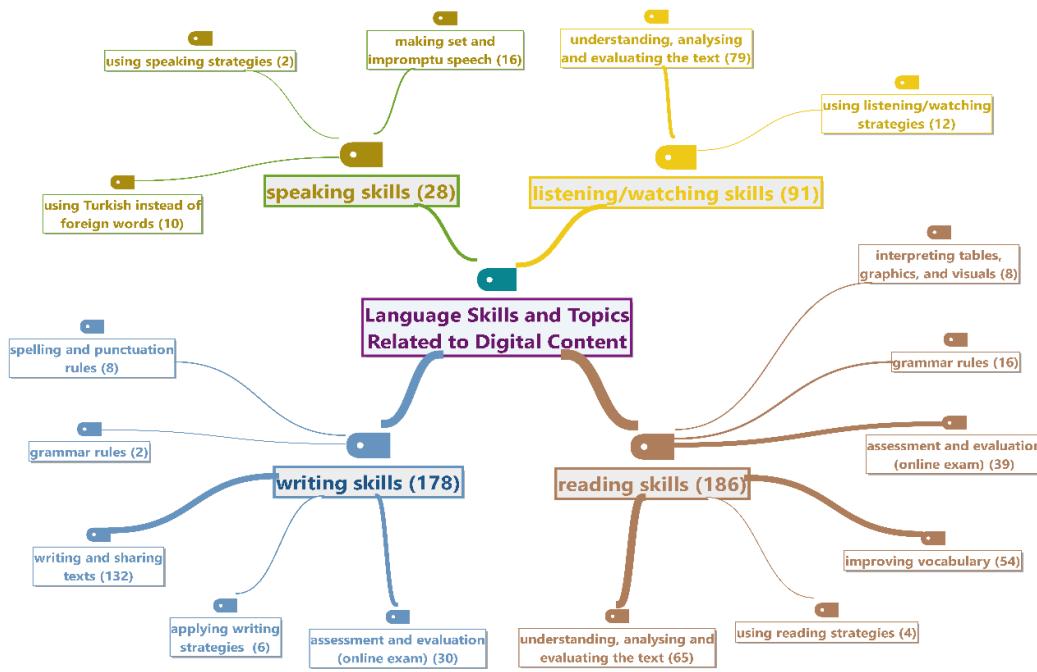
Figure 6. Language skills and topics related to digital content

As is shown in Figure 6, the digital contents produced by the participants for mother tongue teaching with Web 2.0 tools during the implementation period emerged in the codes of reading skills, writing skills, listening/watching skills, and speaking skills. In addition, most digital content was developed for reading (186) and writing skills (178). The digital contents developed for reading skills were as follows: understanding, analyzing, and evaluating the text; assessment and evaluation (an online exam); improving vocabulary and grammar rules; interpreting tables, graphics, and visuals; and using reading strategies. Most digital content for reading skills was produced in the sub-code of understanding, analyzing, and evaluating the text (65). The digital contents developed for writing skills include writing and sharing texts, assessment and evaluation (an online exam), spelling and punctuation rules, applying writing strategies, and grammar rules. Most digital content for writing skills was produced under the sub-code of writing and sharing texts (132). The digital content developed for listening and watching skills included understanding, analyzing, and evaluating the text, as well as using listening and watching strategies. Most digital content for listening and viewing skills was produced in the sub-code of understanding, analyzing, and evaluating the text (79). The digital contents developed for speaking skills were making set and impromptu speeches, using Turkish instead of foreign words, and using speaking strategies. Most digital content for speaking skills was produced under the sub-code of making set and impromptu speeches (16). These findings show that the participants were able to develop digital content for teaching four basic language skills during the implementation.

Opinions Before and After Implementation

The codes that emerged from the participant's views on digital content development with Web 2.0 tools before and after the implementation are shown in Figure 7.
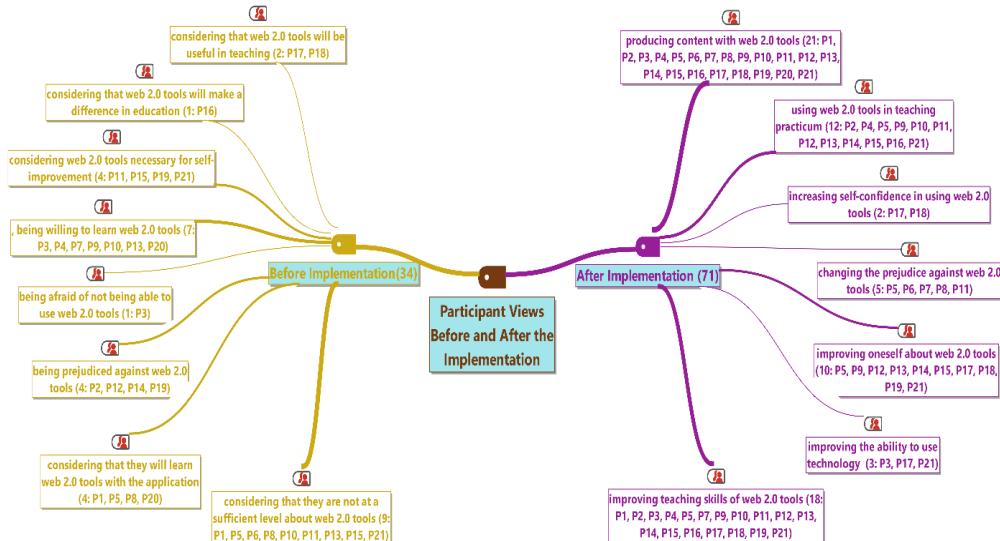
Figure 7. Participant views before and after the implementation

Figure 7 shows that the participant's views on developing digital content with Web 2.0 tools before the application are gathered under the codes of considering that Web 2.0 tools will be useful in teaching, considering that Web 2.0 tools will make a difference in education, considering Web 2.0 tools necessary for self-improvement, being willing to learn Web 2.0 tools, being afraid of not being able to use Web 2.0 tools, being prejudiced against Web 2.0 tools, considering that they will learn Web 2.0 tools with the application, and considering that they are not at a sufficient level about Web 2.0 tools. Similarly, when Figure 7 is examined, it is seen that the participant's views on developing digital content with Web 2.0 tools after the implementation are gathered under the codes of producing content with Web 2.0 tools, using Web 2.0 tools in teaching practicum, increasing self-confidence in using Web 2.0 tools, changing the prejudice against Web 2.0 tools, improving oneself about Web 2.0 tools, improving the ability to use technology, and improving the teaching skills of Web 2.0 tools. Before the implementation, the participants mostly expressed their opinions on the codes, considering that they were not at a sufficient level about Web 2.0 tools and were not willing to learn Web 2.0 tools; after the implementation, the participants mostly expressed their opinions on the codes of producing content with web 2.0 tools, improving teaching skills with Web 2.0 tools, and using Web 2.0 tools in teaching practicum. These findings obtained from the participants' opinions before and after the application indicate that they learned to use Web 2.0 tools, transformed them into teaching skills, created awareness about using Web 2.0 tools, and developed self-confidence by eliminating their prejudices.

In the interview conducted before the application, participant code P13 stated that he was not at a sufficient level regarding Web 2.0 tools with the opinion, "*My ability to use digital content platforms is almost non-existent.* The participant P21 responded in a similar way: "*I still feel incomplete in this regard."* Participant P11 said, "*I am not very good with technology; I need to improve myself. Web 2.0 tools will be a steppingstone for me*," and s/he expressed her expectations from the applications to consider Web 2.0 tools necessary for self-improvement. In the post-implementation interview, participant P2 said, "*The practices we have done will contribute to our teaching life. In the teaching practicum, I made the lessons more remarkable by preparing activities and presentations for our students with these contents. I had the opportunity to improve myself in the digital environment with the skills it added to me during the practice.*" He stated that he could use Web 2.0 tools in his or her teaching practicum. Participant P17 said, "*Before the application, I did not know much about Web 2.0 tools. However, with these applications, I liked having knowledge and designing activities, and I felt I improved myself. I cannot explain the excitement I experienced, especially in preparing my first animation. I still open it from time to time and watch that video. I prepared my work after those efforts very sincerely and regularly. These applications have added a lot to me digitally*," and she expressed that she has improved herself in Web 2.0 tools.

Development of Competence in the Use of Web 2.0 Tools through Implementation

The mean scores obtained from the Web 2.0 Tools Use Competence Scale, administered as a pre-test and post-test to determine the participants' competencies in using Web 2.0 tools, are shown in Table 1.

Table 1. Participants' pre-test and post-test score averages

Test	Average	Level of Participation
pre-test	2.41	rarely (2)
post-test	4.60	always (5)

Table 1 shows that the mean pre-test score of the participants for their competencies in using Web 2.0 tools was 2.41, and the mean post-test score was 4.60. While the mean score of the participants' competence in using Web 2.0 tools before the application was determined to be rare, it was defined as always after the application. This finding can be interpreted as an improvement in the participants' competencies in using Web 2.0 tools.

Discussion and Conclusion

Discussion

It is presently well established in the literature that online learning resources have become more widespread than printed textbooks (Karcmer-Klein & Shinas, 2012; Estable, 2018). New technological systems and tools are rapidly spreading in parallel with the development of educational technology and are used to benefit educational activities (Joo, Bong, & Choi, 2000). Peregoy and Boyle (2012) stated that students' motivation increases when they encounter new teaching material other than books in the classroom environment. Teachers are also expected to create multiple learning environments in their lesson processes, to benefit from digital technology elements, and to use and make them use these elements regularly in the process (Yazar, 2019) because using digital technology is beneficial in terms of optimizing the materials used in the lessons and arousing interest (Özdemir, 2021). Determining which Web 2.0 tools will be used for the content of the teaching and having knowledge about how they can be used serves the principle of "integrating the content to be taught with technology," which is among the teacher competencies (Kanık-Uysal & Çinpolat, 2022). This study is aimed at developing the skills of pre-service teachers who will teach Turkish as a mother tongue to produce digital content with Web 2.0 tools. Thus, it is expected that those who will become teachers and teach Turkish as a mother tongue will transfer their skills in using Web 2.0 tools to the classroom environment and involve students in the process.

The first finding of the study is related to which Web 2.0 tools the participants were able to use during the implementation process. During the implementation, the participants used 46 different Web 2.0 tools. Among these tools, Canva, Socrative, and WordMint Web 2.0 tools were mainly used to produce digital content. Thus, the participants developed their skills in creating digital content with these tools. Teachers and instructors use Web 2.0 tools to teach Turkish as a mother tongue (Süğümlü & Aslan, 2022) and as a foreign language (Aytan & Ayhan, 2018). Yaşar-Sağlık and Yıldız (2021) stated that studies on the use of Web 2.0 tools in language teaching have increased in the last five years. Web 2.0 tools have improved reading, writing, listening, and speaking skills in both Turkish and foreign language teaching. Canva, which is the most used Web 2.0 tool by the participants, can be used to concretize abstract concepts, motivate students, attract attention, repeat information, remind prior knowledge, and realize learning effectively (Smaldino, Lowther, & Mims, 2015). Socrative, another Web 2.0 tool most frequently used by the participants, can be used functionally to ensure students' participation in assessment and evaluation processes. For example, the study conducted by Wash (2014) stated that student participation was higher in cases where responses were given using technology in the classroom. WordMint, the participants' third-most-used Web 2.0 tool, can be used to design fun puzzle activities. Other Web 2.0 tools used during the implementation can also be used for teaching purposes in several aspects. Kahoot and similar web applications increase student participation and contribute to the development of learning (Siau, Sheng, & Nah, 2006). Unlike many presentation tools, Prezi allows working on and accessing presentations online (Perron & Stearns, 2010). The Kahoot application creates assessment tools such as multiple-choice questions, questionnaires, and true and false (Tıraşoğlu, 2019). Gursoy and Goksun (2019), in their study with pre-service science teachers, stated that pre-service teachers developed content using Web 2.0 tools such as Kahoot, Quizizz, Powtoon, Emaze, MindMeister, and Toondoo during the application and shared the content with the class using Edmodo.

The study's second finding is related to the types of digital content for mother tongue teaching that the participants could develop using Web 2.0 tools during the implementation process. During the implementation,

the participants were able to create teaching content for mother tongue teaching in 13 different types of digital content. Among these content types, puzzles, online quizzes, presentations, video preparation and editing, blogs and websites, and concept maps were the most common. The participants could produce different digital content for mother tongue teaching with Web 2.0 tools and developed their skills in animated-motionless visual design, interactive-non-interactive content production, and digital sharing. Web 2.0 tools provide environments that enable teachers to prepare versatile content they can use in their lessons. Participants benefited from the opportunities that Web 2.0 tools offered during the implementation. In her research, Coutinho (2008) concluded that Web 2.0 tools are versatile tools for pedagogical purposes and for blogging to create effective learning environments. In addition, concept maps created with Web 2.0 tools can be used as teaching tools that organize and present concepts, sub-concepts, and relationships between concepts (Novak & Canas, 2007). Bhattacharya and Mohalik (2020) stated that digital mind-mapping applications enable students to participate directly in learning. Luo (2013) states that activities designed with Web 2.0 tools can help students develop essential skills, especially language learning skills such as communication, collaboration, and problem-solving, critical skills needed in the 21st century. Developing different types of content with Web 2.0 tools that can produce educationally beneficial content is possible. The participants created different types of content during the implementation and developed their digital content production skills.

The third finding of the study is related to the language skills and topics of the digital content that the participants developed for mother-tongue teaching using Web 2.0 tools during the implementation process. During the implementation, the participants developed content for reading, writing, listening/watching, and speaking skills for mother tongue teaching with Web 2.0 tools. Most digital content was developed for reading and writing skills. The most digital content for reading skills is for understanding, analyzing, and evaluating the text; the most digital content for writing skills is for writing and sharing texts; the most digital content for listening and watching skills is for understanding, analyzing, and evaluating the text; and the most digital content for speaking skills is for making set and impromptu speeches. The topics related to the developed digital contents overlap with the topics in the Turkish as a mother tongue curriculum (MoNE, 2019). Mayer (2014) states that technology contributes to the development of literacy and language skills. In terms of technology use, Web 2.0 tools contribute to language learners' development of speaking, writing, listening, and reading skills (Morgan, 2012). Furthermore, these tools provide an environment for users to write, send, and interact over the web (Balbay & Erkan, 2018). Shin (2006) states that synchronous or asynchronous communication is very effective in language learning. Orehovacki, Bubas, and Konecki (2009) stated that students are no longer recipients of knowledge through Web 2.0 technologies but co-creators of knowledge through exchanging information and experience. This requires future teachers to have the skills to integrate Web 2.0 technologies into their lessons. The findings of this study show that Web 2.0 tools can be integrated into mother-tongue teaching.

The fourth finding of the study is related to the participants' views on producing digital content with Web 2.0 tools before and after the implementation. Before the implementation, the participants mostly considered that they were not at a sufficient level regarding Web 2.0 tools. After the implementation, they mostly stated that they could produce content with Web 2.0 tools, that Web 2.0 tools improved their teaching skills, and that they benefited from Web 2.0 tools in their teaching practicum. With the practice, the participants learned to use Web 2.0 tools, converted them into teaching skills, created awareness about using Web 2.0 tools, and developed self-confidence in using Web 2.0 tools.

The fifth finding of the study is that the participants' competence averages in using Web 2.0 tools, which were low before the application, increased at the end of the application. The participants' views and the study's findings on the competence of using Web 2.0 tools overlap. Sadaf, Newby, and Ertmer (2012) concluded in their research that it is important for pre-service teachers to develop positive attitudes towards these tools and their perceptions of the usefulness of these tools in their intention to use Web 2.0 technologies in classroom environments in the future. Another study determined that pre-service science teachers were happy to participate in content development with Web 2.0 tools, learned ways to integrate technology into their fields, and had fun while developing content (Gursoy & Goksun, 2019). Tu, Blocher, and Roberts (2006) stated that training pre-service teachers to gain high Web 2.0 tool self-efficacy perceptions will support future students in acquiring 21st-century skills.

Conclusion

The participants developed their digital content production skills through the research using many different Web 2.0 tools. With these Web 2.0 tools, participants developed instructional content such as puzzles, online quizzes, presentations, video preparation and editing, blogs and websites, and concept maps. Thus, the participants

developed animated-motionless visual design, interactive-non-interactive content production, and digital sharing skills for mother tongue teaching with Web 2.0 tools. The various digital contents created by the participants with different Web 2.0 tools are digital teaching materials for reading, writing, listening, watching, and speaking skills that form the basis of mother tongue teaching. In addition, most digital content was developed for reading and writing skills. The participants' opinions about feeling inadequate about Web 2.0 tools before the implementation changed after the implementation. The participants could produce content with Web 2.0 tools, improve their teaching skills with these tools, and benefit from them in their teaching practicum. Participants' self-confidence in using Web 2.0 tools also increased. Likewise, the participants' competencies in using Web 2.0 tools increased with the application.

Limitations of the Study and Suggestions for Future Research

This research was conducted within the framework of action research, one of the qualitative research designs. The results obtained through the study are limited to the participant group and the data collection tools used in the analysis. Different results may emerge with varying groups of participants and data collection tools. For this reason, conducting further research on this subject will be helpful for the more qualified training of pre-service teachers who will teach the mother tongue In this framework, various suggestions have been developed for future research:

- The research revealed that many Web 2.0 tools could be used in mother-tongue teaching. In new studies, the usability of Web 2.0 tools not included in this research should be examined in mother-tongue teaching. In addition, guidelines for the use of Web 2.0 tools can also be prepared. Similar studies can be conducted with participant groups that have already become teachers.
- Within the scope of this research, it was seen that different types of digital content could be developed with Web 2.0 tools. These digital materials can be used by pre-service teachers in their teaching practicum and by teachers in their lessons. In addition, pre-service teachers and teachers can also develop different types of digital materials using Web 2.0 tools.
- The digital materials developed in the research were seen as being designed for mother tongue teaching and aimed at the four basic language skills. This means that reading, writing, listening, watching, and speaking skills can be developed with Web 2.0 tools. Teachers can cover topics related to language skills in Turkish lessons with Web 2.0 tools and involve students. They can also ask students to do their work using Web 2.0 tools and share it in the classroom.
- This study's participant group thought they were not competent in Web 2.0 tools before the research. After the application, they stated that their skills in using Web 2.0 tools improved. In future studies, affective elements such as perception, attitude, anxiety, and motivation toward using Web 2.0 tools can be improved. In addition, it can be ensured that pre-service teachers are ready in terms of affective aspects before using these tools in teacher education.

Conflicts of Interest
No potential conflict of interest was reported by the author.

Ethical Approval
Ethical permission (30.03.2022–40) was obtained from the Ordu University Ethics Committee for this research.

References

Ajjan, A., & Hartshorne, R., (2008). Investigating faculty decisions to adopt web 2.0 technologies: theory and empirical tests. *Internet and Higher Education*, *11*(2), 71-80. https://doi.org/10.1016/j.iheduc.2008.05.002

Akman, E. (2022). Öğretim teknolojilerinde web araçları. K. Tekşan & Ü. Süğümlü (Eds.), *Web araçları ile Türkçe öğretimi* içinde (s. 1-28). Eğiten Kitap.

Alexander, B. (2006). *Web 2.0: A new wave of innovation for teaching and learning?* Retrieved from https://members.educause.edu/bryan-alexander

Almalı, H., & Yeşiltaş, E. (2020). The effect of web 2.0 technologies used teaching geography topics ın social studies education on students academic achlevement and attitudes. *Turkish Scientific Researches Journal*, *5*(2), 165-182. Retrieved from https://dergipark.org.tr/tr/pub/tubad/issue/59101/828476

Aytan, T., & Ayhan, N. H., (2018). Digital environments in teaching turkish as a foreign language. *International Journal of Bilingualism Studies*, 1, 3-37. Retrieved from https://www.academia.edu/38080983/T%C3%BCrk%C3%A7enin_Yabanc%C4%B1_Dil_Olarak_%C3%96%C4%9Fretiminde_Dijital_Ortamlar_Digital_Environments_in_Teaching_Turkish_as_a_Foreign_Language

Bağcı Ayrancı, B., & Süğümlü, Ü. (2021). Dijital okuma. F. Susar Kırımızı (Ed.), *Dijital dönüşümde Türkçe öğretimi* içinde (s. 161-175). Anı Yayıncılık.

Balbay, S., & Erkan, G. (2018). Perceptions of ınstructors on using web 2.0 tools in academic english courses. *International Journal of Curriculum and Instruction*, *10*(2), 45-60. Retrieved from https://open.metu.edu.tr/handle/11511/85949

Bhattacharya, D., & Mohalik, R. (2020). Dijital mind mapping software: A new horizon in the modern teaching-learning strategy. Journal of Advances in Education and Philosophy, 4(10), 400-406. https://doi.org/10.36348/jaep.2020.v04i10.001

Bozna, H., & Yüzer, T. V. (2020). Digital natives' use of web 2.0 tools in learning foreign language: A case study. Language and Technology, (2)1, 26-43. Retrieved from https://dergipark.org.tr/en/pub/lantec/issue/52176/600923

Buffington, M. L. (2008). Creating and consuming web 2.0 in art education. *Computers in the Schools, 25*(3-4), 303-313. https://doi.org/10.1080/07380560802365898

Cheung, W. S., & Hew, K. F. (2009). A review of research methodologies used in studies on mobile handheld devices in K-12 and higher education settings. *Australasian Journal of Educational Technology*, *25*(2), 153-183. https://doi.org/10.14742/ajet.1148

Clements, J. A., & Boyle, R. (2018). Compulsive technology use: Compulsive use of mobile applications. *Computers in Human Behavior, 87*(2018), 34-48. https://doi.org/10.1016/j.chb.2018.05.018

Conole, G, & Alevizou, P. (2010). *A literature review of the use of web 2.0 tools in higher education*. Retrieved from https://www.advance-he.ac.uk/knowledge-hub/literature-review-use-web-20-tools-higher-education

Coutinho, C. P. (2008). Web 2.0 tools in pre-service teacher education programs: An example from Portugal. Retrieved from http://repositorium.sdum.uminho.pt/handle/1822/8467

Creswell, J. W. (2012). *Educational research* (4th Edition). Boston: Pearson Education Inc.

Çelik, T. (2021). Web 2.0 araçları kullanımı yetkinliği ölçeği geliştirme çalışması. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 51, 449-478. https://doi.org/10.9779/pauefd.700181

Derince, Z. M., & Özgen, B. (2017). Eylem araştırması. F. N. Seggie & Y. Bayyurt (Eds.). *Nitel araştırma yöntem teknik ve yaklaşımları* (2. Baskı) içinde (s. 146-161). Anı Yayıncılık.

Elmas, R., & Geban, Ö. (2012). Web 2.0 tools for 21st century teachers. *International Online Journal of Educational Sciences*, *4*(1), 243-254. Retrieved from https://iojes.net/?mod=tammetin&makaleadi=&makaleurl=IOJES_795.pdf&key=41244

Estable, M. D. R. (2018). Implementation factors and faculty perceptions of electronic textbooks on the ipad. *Open Praxis*, *10*(1). 41-54. https://doi.org/10.5944/openpraxis.10.1.729

European Commission (2010). *The future of learning: European teachers' visions*. Luxembourg: Publications Office of the European Union. Retrieved from https://www.researchgate.net/publication/256461828_The_Future_of_Learning_European_Teachers'_Visions

Franklin, T., & Harmelen, M. V. (2007). Web 2.0 for content for learning and teaching in higher education. Retrieved from https://www.franklin-consulting.co.uk/LinkedDocuments/Web2-Content-learning-and-teaching.pdf

Girgin, E. G. (2011). A web 2.0 tool for language teaching with flash content. *Procedia Computer Science,* 3, 627–631. https://doi.org/10.1016/j.procs.2010.12.105

Gursoy, G., & Goksun, D. O. (2019). The experiences of pre-service science teachers in educational content development using web 2.0 tools. *Contemporary Educational Technology*, *10*(4), 338-357. https://doi.org/10.30935/cet.000000

Hague, C., & Payton, S. (2010). *Digital literacy across the curriculum*. UK: Futurelab.

Horzum, M. B. (2010). Investigating teachers' Web 2.0 tools awareness, frequency and purposes of usage in terms of different variables. *International Journal of Human Sciences*, *7*(1), 603-634. Retrieved from https://www.j-humansciences.com/ojs/index.php/IJHS/article/view/910/506

Johnson, A. P. (2005). *A short guide to action research.* Boston, MA: Pearson Publishing.

Joo, Y. J., Bong, M., J. B., & Choi, H. J. (2000); Self-effiacy for self-regulated learning, academic self-effiacy, and internet self-effiacy in web based instruction. *Educational Technology Research and Development, 48*(2), 5-17. Retrieved from https://link.springer.com/content/pdf/10.1007/BF02313398.pdf

Kanık-Uysal, P., & Çinpolat, E. (2022). Okuma becerisi öğretiminde web araçlarının kullanımı. K. Tekşan & Ü. Süğümlü (Eds.), *Web araçları ile Türkçe öğretimi* içinde (s. 29-58). Eğiten Kitap.

Karakuş, N., & Er, Z. (2021). Opinions of pre-service Turkish teachers on the use of web 2.0 tools. *IBAD Journal of Social Sciences*, (9), 177-197. https://doi.org/10.21733/ibad.837184

Karchmer-Klein, R., & Shinas, V. H. (2012). Guiding principles for supporting new literacies in your classroom. *The Reading Teacher*, *65*(5), 288-293. **https://doi.org/10.1002/TRTR.01044**

Kilmen, S. (2021). *SPSS uygulamalı istatistik* (4. Baskı). Anı Yayıncılık.

Luo, T. (2013). Web 2.0 for language learning: Benefits and challenges for educators. *International Journal of Computer-Assisted Language Learning and Teaching*, *3*(3), 1-17. http://dx.doi.org/10.4018/ijcallt.2013070101

Mayer, R. E. (Ed.). (2014). *The Cambridge handbook of multimedia learning*. New York, NY: Cambridge University Press.

Mills, G. E. (2003). *Action research: A guide for the teacher researcher* (2nd Ed.). New Jersey: Merrill Prentice Hall.

Morgan, L. (2012). Generation Y, learner autonomy and the potential of Web 2.0 tools for language learning and teaching. *Campus-wide information systems*, *29*(3), 166-176. https://doi.org/10.1108/10650741211243184

Novak, J. D., & Canas, A. J. (2007). Theoretical origins of concept maps, how to construct them, and uses in education. *Reflecting Education*, *3*(1), 29-42. Retrieved from https://www.researchgate.net/publication/228761562_Theoretical_origins_of_concept_maps_how_to_construct_them_and_uses_in_education

Ofosu, V. T., Mahama, S., Vandyck, E., Kumador, D.K., & Toku, N. (2015). Mother tongue usage in Ghanaian Pre-Schools: Perceptions of parents and teachers. *Journal of Education and Practice, 6*(34), 81-87. Retrieved from https://files.eric.ed.gov/fulltext/EJ1086075.pdf

Orehovacki, T., Bubas, G., & Konecki, M. (2009). Web 2.0 in education and potential factors of Web 2.0 use by students of information systems. ITI '09. *Proceedings of the ITI 2009 31st International Conference on Information Technology Interfaces: Cavtat, Croatia*. Retrieved from https://ieeexplore.ieee.org/document/5196124

Organisation for Economic Cooperation and Development [OECD] (2009). *Teacher evaluation: A conceptual framework and examples of country practices*. Paris: OECD.

Özdemir, O. (2021). Türkçe öğretiminde teknoloji kullanımı. E. Kolaç & S. Dal (Ed.). *Etkinliklerle Türkçe öğretimi* (2. baskı) içinde (s. 589-627). Nobel Akadamik.

Peregoy, S., & Boyle, O. (2012). *Reading, writing and learning in ESL: A resource book for teachers*. New York: Allyn & Bacon.

Perron, B. E., & Stearns, A. G. (2010). A review of a presentation technology: Prezi. *Research on Social Work Practice, 21*(3), 376–377. Retrieved from https://deepblue.lib.umich.edu/bitstream/handle/2027.42/78306/Prezi.pdf?seq

Rani, N., Das, P., & Bhardwaj, A. K. (2022). Rumor, misinformation among web: A contemporary review of rumor detection techniques during different web waves. C*oncurrency and Computation: Practice and Experience, 34*(1). 1-21. **https://doi.org/10.1002/cpe.6479**

Rich, M. (2008). Millennial students and technology choices for information searching. *Electronic Journal of Business Research Methods, 6*(1), 73-76. Retrieved from https://academic-publishing.org/index.php/ejbrm/article/view/1226/1189

Robson, C. (2017). *Bilimsel araştırma yöntemleri gerçek dünya araştırması* (2. Baskı). Anı Yayıncılık.

Sadaf, A., Newby, T. J., & Ertmer, P. A. (2012). Exploring factors that predict preservice teachers' ıntentions to use web 2.0 technologies using decomposed theory of planned behavior. *Journal of Research on Technology in Education*, *45*(2), 171-195. Retrieved from https://files.eric.ed.gov/fulltext/EJ991844.pdf

Shin, N. (2006). Online learner's "flow" experience: An empirical study. *British Journal of Educational Technology*, 37, 705-720. http://dx.doi.org/10.1111/j.1467-8535.2006.00641.x

Siau, K., Sheng, H., & Nah, F. F. (2006). Use of classroom response system to enhance classroominteractivity. *IEEE Transactions on Education, 49*(3), 398–403. Retrieved from https://ieeexplore.ieee.org/document/1668284

Smaldino, S. E., Lowther, D. L., & Mims, C. (2015). *Instructional technology and media for learning* (12th Edition). NY: Pearson.

Süğümlü, Ü. & Aslan, S. (2022). The use of web 2.0 tools in mother-tongue ınstruction: Teachers' experiences. *International Journal of Education & Literacy Studies, 10*(1), 124-137. https://doi.org/10.7575/aiac.ijels.v.10n.1p.124

Süğümlü, Ü., & Tekşan, K. (2022). Yazma becerisi öğretiminde web araçlarının kullanımı. K. Tekşan & Ü. Süğümlü (Eds.), *Web araçları ile Türkçe öğretimi* içinde (s. 59-88). Eğiten Kitap.

Tekşan, K., & Çinpolat, E. (2021). Türkiye'de ana dili öğretimi. M. Alver & Ü. Süğümlü (Ed.), *Kuram ve uygulamada dünyada ana dili öğretimi* içinde (s. 20-40). Anı Yayıncılık.

The Ministry of National Education [MoNE]. (2017). *Öğretmenlik mesleği genel yeterlikleri.* Öğretmen Yetiştirme ve Geliştirme Genel Müdürlüğü. Retrieved from https://oygm.meb.gov.tr/meb_iys_dosyalar/2017_12/11115355_YYRETMENLYK_MESLEYY_GENEL_YETERLYKLERY.pdf

The Ministry of National Education [MoNE]. (2018). *2023 eğitim vizyonu*. Retrieved from https://www.gmka.gov.tr/dokumanlar/yayinlar/2023_E%C4%9Fitim%20Vizyonu.pdf

The Ministry of National Education [MoNE]. (2019). *Türkçe dersi öğretim programı.* Talim ve Terbiye Kurulu Başkanlığı. Retrieved from http://mufredat.meb.gov.tr/ProgramDetay.aspx?PID=663

Tıraşoğlu, C. (2019). *Web 2.0 tools in Turkish insrtuction of foreigners to improve vocabulary: Kahoot! example* (Unpublished Master's Thesis). Akdeniz University, Antalya, Türkiye. Retrieved from https://acikbilim.yok.gov.tr/bitstream/handle/20.500.12812/40129/yokAcikBilim_10274218.pdf?sequence=-1&isAllowed=y

Tu, C., Blocher, M., & Roberts, G. (2008). Constructs for Web 2.0 learning environments: A theatrical metaphor. *Educational Media International, 45*(4), 253-269. https://doi.org/10.1080/09523980802588576

Turkish Education Association (TEA). (2009). *Öğretmen yeterlikleri.* Turkish Education Association. Retrieved from https://www.ted.org.tr/wp-content/uploads/2019/04/Ogretmen_Yeterlik_Kitap.pdf

UNESCO (2008). *ICT competency standards for teachers.* Paris: United Nations Educational, Scientific and Cultural Organization. Retrieved from https://www.unesco.org/en/digital-competencies-skills/ict-cft

Wash, P. D. (2014). Taking advantage of mobile devices: Using Socrative in the classroom. *Journal of Teaching and Learning With Technology, 3*(1), 99–101. https://doi.org/10.14434/jotlt.v3n1.5016

Yaşar-Sağlık, Z., & Yıldız, M. (2021). Türkiye'de dil öğretiminde Web 2.0 araçlarının kullanımına yönelik yapılan çalışmaların sistematik incelemesi. *Eğitim ve Toplum Araştırmaları Dergisi (JRES), 8*(2), 418-442. https://doi.org/10.51725/etad.1011687

Yazar, İ. (2019). The importance of digital technology applications in teaching Turkish and basic language skills. *The Journal of International Social Research*, *12*(64), 612-623. Retrieved from https://www.academia.edu/54004863/T%C3%BCrk%C3%A7e_%C3%96%C4%9Freti_mi_nde_Ve_Temel_Di_l_Beceri_leri_ni_n_Kazaniminda_Di_ji_tal_Teknoloji_Uygulamalarinin_Yeri_Ve_%C3%96nemi_

Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri* (9. Baskı). Seçkin Yayıncılık.

Yıldırım, İ. (2020). *An investigation of effect of the use of web 2.0 tools on students' academic achievement, levels of self-directed learning with technology and attitudes towards science in the interaction of light and matter unit in 7th grade* (Unpublished Master's Thesis). Kocaeli University, Kocaeli, Türkiye. Retrieved from https://tez.yok.gov.tr/UlusalTezMerkezi/

Examining the Relationship Between Influence Tactics Used by School Principals and Teachers' Perceptions of Organizational Peace

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Abstract

This research aims to examine the relationship between the influence tactics used by school principals and the organizational peace of teachers. The research was carried out with the relational survey model, and the random sampling method was used. 307 teachers who are working in high schools participated in the study. According to the results of normality tests, correlation and regression analyses between variables were performed. According to teacher perceptions, it was concluded that school principals mostly used the tactics of complying with the rules and using personal intimacy the least. It has been determined that the teachers' perceptions of individual, relational, and organizational peace are high and the perceptions of disturbers are low. Influence tactics, which are accepted as soft and rational, affect teachers' perceptions of individual, relational, and organizational peace positively and their perceptions of disturbers negatively. It was concluded that the harsh tactics used by the administrators affected the teachers' perceptions of individual, relational, and organizational peace negatively and the perceptions of disturbers positively. Influencing tactics explain approximately 52% of the variance in teachers' perceptions of organizational peace. The results obtained have revealed that organizational peace studies should be increased while shedding light on new studies to be carried out in the context of organizational peace.

Keywords: high school teachers, school principals, influence, influence tactics, organizational peace

Introduction

Managers are the key figures who build an order for the realization of the organization's goals and strive for the achievement of this order. One of the most basic tasks of managers in achieving the goals of organizations is to influence employees (Ansari & Kapoor, 1987). The influence of the manager on a person or organization constitutes the core of the influence (Werner, 1993) that is considered to be a process (Yukl, 2013). The process of influence is of significance in these organizations since schools, as a system, are the mirror of society, organizations that work in interaction, and places where interpersonal relations are intense. In order to achieve organizational and personal ideals, run this systematic structure smoothly, and ensure innovation and change, school administrators should be able to change the behaviors and attitudes of teachers and other employees (Charbonneau, 2004) and gather them around common values (Haimann, 1962); in short, they should be able to affect them.

In the modern understanding of management, individuals who spend the vast majority of their time in the organization to which they belong try to be influenced by their managers (Chhokar et al., 2007). It can be said that one of the most basic expectations of teachers is to be comfortable and peaceful in the organization (Mishra & Morrissey, 1990). According to Yukl (2013), influence tactics that are used positively and supportively make employees feel peaceful and safe. It is emphasized that influencing people in the right way and at the right time increases the effectiveness of the organization, directly affects the organizational climate (Aydın & Pehlivan, 2010), positively increases the motivation of employees, and creates an atmosphere of peace and happiness in the organization (Plutchik, 2001), so that employees begin to look at their future in the organization with hope (Bozanoğlu & Konan, 2020).

Influence Tactics

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Influence as a concept occurs in different situations, events, and phenomena in different forms and levels within the organization. Influence can be used by the manager to influence his or her subordinates for various purposes, or it can be used by the subordinate to gain a position or gain power in the organization (Mintzerg, 2009). It is important for the organization that the decisions taken by the managers in line with the goals and targets are accepted, internalized, and dynamically put forward by their subordinates (Yukl et al., 2008).

Influence, which is one of the most basic pillars of management, plays an important role in helping organizations adapt to all kinds of times, events, and situations (French & Raven, 1959), keep the organization moving without disintegration, increase the performance of employees (Yukl, 2013), compete with other organizations, and gain power (Cialdini, 2001). Influence tactics can be defined as an individual's changing the behavior, attitudes, and values of another person by using force (French & Raven, 1959). According to Pfefferr (1992), it is expressed as the methods of applying force in order to prevent resistance and increase efficiency, and managerial abilities that can exhibit all these It can be said that a leader of an organization can fully display influence behaviors if he or she knows the employees correctly, can gather them under a mission, ensure their participation in the decision, and make appropriate orientation and placement decisions (Drew, 2010). Educational organizations, like all other organizations, may consist of individuals with different personalities, characters, beliefs, behaviors, perceptions, attitudes, and values. For this reason, it is important for school administrators to initiate and maintain interaction among employees in line with the goals and objectives of the organization and use influence tactics in this process (Kondakçı & Zayim, 2013).

In many studies on influence tactics (Faeth, 2004; French & Raven, 1959; Kipnis et al., 1980; Schriesheim & Hinkin, 1990; Yukl et al., 2008), different classifications have been made. While the classification method of French and Raven (1959) was based on *power,* the classification of Kipnis et al. (1980) was categorized *as strong, weak, and rational;* afterward, it was changed into *hard* (pressure, compliance with the rules), *soft* (encouraging demand, cooperating, appreciating, consulting, using personal intimacy), and *rational* (persuading through reason, responding, informing, and coalition with others) tactics and accepted as the first systematic classification. Tactics in which power and authority come to the fore are harsh; tactics using personal power and talent are soft; and tactics that attach importance to logic are defined as rational tactics. While Schriesheim and Hinkin (1990) examined the influence tactics in six categories, Faeth (2004) assigned them to categories such as the *direction, purpose, and outcome of the influence; the order, frequency, and combination of the tactic.* Continuing their studies in light of all these, Yukl et al. (2008) made the most comprehensive and systematic classification of influence tactics. The influence tactics that have also been used in this study are as follows:

1. Persuasion through reason (rational persuasion) Reasonable inferences and factual evidence are used to influence the person to be affected.
2. Responding. Telling the person to be influenced that he or she will be assisted in any job later on, provided that he or she assists in a job in line with the needs of the organization.
3. Making an encouraging request. It is the search for ideals and values to increase commitment in the emotions of the person to be influenced before offering a request or suggestion.
4. Compliance with the rules (presenting a legal basis). It is the use of policies, organizational traditions, or rules that have an official (legal) basis of the organization when trying to influence the person to be influenced.
5. Informing. A proposal is made about his or her career, and it is explained how to continue the professional career of the person to be influenced.
6. Suppression. It is to constantly remind or threaten the person to be influenced.
7. Collaboration. It is a method of getting the help of other employees while trying to influence the person being influenced.
8. Appreciate. It is making positive statements or behaving positively about the work or personality of the person to be influenced before making him or her do something.
9. Exchange ideas (consultation). Encouraging the person to be influenced to develop suggestions or supporting and helping him or her to achieve the imagined change
10. Using personal intimacy (personal charm). It is to act friendly and present it as an element of attraction before making a request to the person to be affected.
11. Building coalitions with others. Attempting to persuade the person to be influenced by asking for help.

While the aforementioned influence tactics show differences in usage by managers according to place, time, person, and events, they may differ in their employees' reactions to these influence tactics. The purpose and choice of the influence tactic, the relationship between the employee and the manager, the level and desire of the manager's use of power (Charbonneau, 2004), the perception, attitude, and previous experiences of the employee towards the requested job affect the results of the influence tactic (Yukl, 2013), and it creates

reactions in the person such as resistance. Harmony, opposition, loyalty (Koşar & Pehlivan, 2020), peace, or happiness (Bozanoğlu, 2020).

For this reason, as long as a school principal uses influence tactics that are soft and facilitate compliance, the likelihood of teachers fulfilling and adopting the given task will increase. Thus, it is assumed that teachers will be peaceful in an individual sense as well as that the relations that ensure organizational peace among teachers will increase (Bozanoğlu, 2020). On the contrary, the use of harsh tactics by managers might create resistance among employees (Koşar, 2016). In addition to the fact that the person gets restless, this resistance negatively affects the peaceful environment in the organization (Demirci & Ekşi, 2017).

Organizational Peace

The motivation of the employees in the organization and their feelings of safety and happiness are important for the realization of the organizational goals. In the meantime, the fact that employees feel both internally and externally peaceful has become a salient issue in today's understanding of education management. Peace, inner peace, or quietude (Bozanoğlu, 2020) is defined as the feeling of comfort that a person feels inside and reflects positively on the outside. Etymologically, it is expressed as peace or being ready (Konan & Bozanoğlu, 2020), and psychologically as calmness or comfort of thought. According to philosophers, peace has different meanings. According to Hegel, keeping one's pecker up in sad moments is expressed as peace. According to Nietzsche, being peaceful is indicated as a part of living a carefree life and finding happiness. According to Islamic philosophers, it is important to prefer to be peaceful instead of happy (Bacanlı, 2016).

When we look at the definitions and models for the concept of peace, it is seen that most of them are associated with the concept of self. According to Allport, who put forward one of these models, being peaceful is related to one's *real self*, *ideal self*, and *necessary self*. The incompatibility of these selves with each other causes feelings such as anxiety, guilt, and inconsistency (Bacanlı, 2016). According to Demirci and Ekşi (2017), the fact that these selves are different from each other usually causes the person to feel uneasy. While definitions of the concept of peace have been made in many ways until today, definitions of the state of peace in a community or organization have been limited. In this sense, Bozanoğlu (2020), who made the first comprehensive definition of organizational peace, defines organizational peace as a multifaceted process in which all employees can look at organizational culture, norms, and goals holistically; there is healthy communication and trust among the employees; assistance and solidarity are at the forefront; and it includes the formal and informal aspects of the organization. In organizations, peace has a relationship with physical, psychological, and sociological parameters. Peace can be defined as developing positive relationships, not being exposed to negative situations and conditions in the organization, and feeling good about oneself. Therefore, instead of perceiving peace as a goal of the organization, it is necessary to see it as a tool for its purposes. In line with the mentioned parameters and organizational goals, the concepts related to organizational peace are defined as follows:

Individual peace. It can be defined as the individual's feeling of being supported, comfortable, and safe in an organization; thinking that he works efficiently; having positive feelings and thoughts about the working environment; believing that his problems are solved; feeling good in the organizational environment; and being satisfied with the time he spends in the organization. Individual peace can be considered one of the positive or negative reactions to the inner balance of an individual's feelings and thoughts.

Relational peace. It can be defined as the existence of an understanding and motivating work environment where processes, starting with the existence of goals and objectives within the organization, develop open communication between stakeholders. Also, relational peace can be expressed as places where successful people or works are appreciated, fair distribution of duties is prevalent, everyone is treated equally, balance prevails, and people gather around common goals.

Peace Disturbers. It can be defined as oppressive administrative environments in which administrators and teachers at school have an unwarranted desire to be appreciated, individuals are forced to do work for which they have no duties and responsibilities, individual goals and interests are prioritized over the goals and objectives of the organization, and a judgy language prevails in interpersonal relations.

School administrators can use different influence tactics on teachers and other personnel in order to achieve the school's goals and objectives (Cerni et al., 2014). While some school principals try to influence their teachers with hard tactics by taking support from the legal legislation and applying pressure, some school principals try to influence their teachers with soft tactics through friendship and persuasion on behalf of carrying out educational activities (Kapoutsis et al., 2019). According to Friedmanand and Berkovich (2020), the soft or hard

tactics used in the influence process might also affect the peace of the teachers in the organization, either positively or negatively. A harsh influence tactic can reduce the motivation of the teacher and make her or him uneasy. On the other hand, it is thought that a soft influence tactic can positively affect the motivation and peace of the teacher in the organization.

It is deemed important that teachers feel better, happier, and more peaceful in schools with a positive climate and strong institutional culture (Ancheta et al., 2021). Thus, it is assumed that when the correct influence tactic and process are used by the school administrator, teachers' perceptions of organizational peace and productivity will increase, students will be positively affected indirectly, their interest and curiosity will increase, all school personnel can integrate, and a strong school climate and culture will be created. For this reason, school principals should know how important influence behavior is, learn what the ways of influencing the employee are, understand the provisos and conditions for using these tactics, and apply them in their school. According to Tekben and Koşar (2019), the way to implement them is through good observation, dominance of management, and competences capable of influencing.

In this study, the concepts of influence tactics are used to express how teachers perceive the rational, soft, and harsh behaviors and attitudes that school principals use to influence teachers. Besides, organizational peace and its sub-concepts mean the inner peace of mind (individual) that teachers perceive in a personal context, their external (relational) peace that can change or be affected by the events and phenomena they encounter in the community, and events and phenomena that disrupt their peace within the organization or in the personal context according to their personalities. Research indicates that school administrators use different influence tactics than administrators in all other organizations. It is observed that the effects of influence tactics that school administrators often use or do not prefer to use on employees differ (Barbuto & Moss, 2006). While the quality of the relationship between the manager and the employees is affected depending on whether the tactic used is hard, soft, or rational (Yukl & Falbe, 1990), it is assumed that the peace of the employees may also be affected in this direction. While the soft tactic used affects the feelings and thoughts of the employees positively, it is hoped that it will increase the perception of peace within the organization. Otherwise, it is believed that a hard tactic may adversely affect the peace of employees within the organization. When the domestic and foreign literature are examined, studies based on the relationship between influence behaviors and peace are not found. However, independent studies have shown that the influence tactics used by managers (Drew, 2010; Faeth, 2004; Schriesheim & Hinkin, 1990; Tekben & Koşar, 2019; Yukl, 2013) affect employees in a physiological and psychological context. Besides, in studies on the peace of mind of employees in the organization (Bacanlı, 2016; Demirci & Ekşi, 2017; Konan & Bozanoğlu, 2020), it has been seen that peace is affected by physical, psychological, and sociological parameters and can increase or decrease work motivation and performance. For this reason, it is considered important to examine the relationship between the influence tactics used by school principals and the organizational peace of teachers in this study. In addition to the theoretical contribution of this study to the educational sciences literature by studying the two concepts together, it is hoped that it will also make practical contributions to policymakers, managers, decision-makers, and practitioners. In this study, it was aimed at examining the relationship between the influence tactics used by school principals and the organizational peace of teachers. In the study, answers were sought for the following sub-objectives in line with this main purpose:

1. According to teacher perceptions, which influence tactics do school principals use and to what extent?
2. What is the level of teachers' perceptions of organizational peace in the general and sub-dimensions of the scale?
3. Is there a significant relationship between the influence tactics used by school principals and teachers' perceptions of organizational peace?
4. Are the influence tactics used by school principals a significant predictor of teachers' organizational peace dimensions?

Method

Research Model

In this study, which examines the relationship between the influence tactics used by school principals and the organizational peace of teachers, the relational survey method was used. A relational survey is a research method that examines the perceptions, views, or attitudes of the participants about a phenomenon or event in studies with two or more variables and tries to determine the change between the variables (Karasar, 2014). In such studies, the co-changes of the variables are examined rather than the cause-effect relationship (Büyüköztürk et al., 2016).

Population and Sample
The target population of the research consists of 1162 teachers working in secondary schools in Siirt in the 2021–2022 academic year. A random sampling technique was used for sample selection from the population. Random sampling is a sampling method in which the probability of each unit in the population entering the sample is equal and independent from each other (Büyüköztürk et al., 2016). Permission for the study was obtained with the decision of the Ethics Committee of Siirt University, dated December 15, 2021, and numbered 1708. The sample size of the study was determined to be 350 teachers. The sample size of the study was determined to be 350 teachers based on Glenn's (1992) sample size confidence level study. However, after removing the incomplete and incorrectly filled scales, 307 scales that were filled in accordance with the purpose and completely were included in the analysis.

Of the participants, 182 were male and 125 were female teachers. It can be said that the majority of the teachers participating in the study are between the ages of 28 and 39 (64.8%, n = 179). According to the types of schools, it was determined that the teachers who participated in the study were the ones who worked in Anatolian high schools the most (37.8%, n = 116). Science, social sciences, sports, and fine arts high schools, one each in the province of Siirt, where the study was conducted, were combined under the other category. The rate of those who participated in the study in these school types was 12.4% (n = 38). The majority of the teachers who participated in the study have been working at their school for 0–2 (40.4% n = 124) or 3-5 (32.6% n = 100) years. Considering the duration of working with the school principal, it has been determined that 183 (59.6%) of the teachers have been working with the principal for less than 2 years, while the number of those who have been working with the school principal for 3-5 years is 95 (30.9%). As a result, it can be said that the teachers participating in the study are relatively young and have been working with the principals in their schools for relatively less time.

Data Collection Tools
Influenced Behavior Scale for Employees. It is a scale used to measure the influence tactics used by school administrators according to the opinions of the teachers. It was developed by Yukl et al. (2008), adapted into Turkish by Gözü (2012), and developed in two ways: affected and influenced. In this study, the Influenced Behavior Scale was used. The scale, which is prepared from the Five-Decker Likert type, is five-degree; the options range from I don't remember that he ever used this tactic for me (1) to He uses this tactic very often for me (5). The scale consists of 44 items and has 11 sub-dimensions indicating influence tactics. The scale does not produce a total score. As the scores obtained from the dimensions increase, the frequency of the relevant influence tactics used by the principals according to the perceptions of the teachers increases as well. The Cronbach's alpha reliability coefficients recalculated in this study were respectively found to be persuasion through reason (.884), responsiveness (.921), encouraging demand (.890), compliance with rules (.906), informing (.925), pressure (.765), cooperation (913), appreciating (.914), consulting (.902), using personal closeness (.909), and forming coalitions with others (.871). According to the researchers (Yang & Green, 2009), it can be said that the reliability of the scale is generally high and acceptable since the reliability coefficient of the scale dimensions is relatively high and the dimensions are close to 1, indicating a high level of reliability.

Organizational Peace Scale. This scale, developed by Bozanoğlu and Konan (2020), aims to determine teachers' perceptions of organizational peace in 28 items and 3 sub-dimensions. The scale was arranged as a five-point Likert-type participation scale (1 I strongly disagree, 5 I completely agree). The scale consists of the dimensions of individual peace, relational peace, and peace disturbers. When calculating the total score of the scale, the items in the sub-dimension of peace disturbers are reverse scored. The lowest score that can be obtained from the scale is 28, whereas the highest score is 140. High scores obtained from the scale indicate a high level of organizational peace perception. The Cronbach's alpha coefficient for this study was calculated as .949 for individual peace, .955 for relational peace, .839 for disturbers, and .962 for organizational peace total. According to Yang and Green (2009), since the reliability coefficients of the total scale and its sub-dimensions are close to 1, it can be said that the reliability of the scale is generally high and acceptable, since the internal consistency of the items in the scale is high.

Data Collection and Analysis
The scales were uploaded to the online questionnaire creation program, and teachers were contacted and filled in through face-to-face interviews by way of social networking programs and school visits. Incorrect and incomplete refills from the collected scales were excluded from the study, and the remaining 307 scales were put to analysis. Normality tests were performed to determine the suitability of the data set for parametric testing methods.

When the results of the normality tests are examined, it is seen that in both the dimensions of the affected behavior scale towards the employees and the overall organizational peace scale and its sub-dimensions, the skewness and kurtosis values are between "± 1", the standard deviation values are between .048 and .077, the average values are between 2.69 and 3.88 and the median values are between 4 and 2.50. Thus, it can be said that the median values and the arithmetic means are close to each other, and in this case, the normality degrees of the scale are within acceptable limits according to Tabachnick and Fidell (2013).

In the analysis of the data, in order to determine the relationship between the influence tactics used by school principals and teachers' organizational peace, Pearson Product-Moment Correlation Coefficient analysis was conducted as well as descriptive statistics. In addition, multiple regression analyses were conducted to determine the power of the levels of influence tactics used by school principals to predict teachers' perceptions of organizational peace. The obtained data ($\alpha = 0.05$) were analyzed according to the significance level, and the results were transferred to the tables.

Findings

In this section, the analyses related to each sub-problem of the research are given. The descriptive statistics regarding the scales used are given in Table 1.

Table 1. Descriptive Statistics About the Scales Used

Dimensions	N	$\bar{X}$	s.s	Level
Persuasion Through Reason	307	3,87	,975	Often
Responding	307	2,95	1,36	At times
Making an Incentive Request	307	3,78	1,03	Often
Compliance with the Rules	307	3,88	,986	Often
Informing	307	3,65	1,16	Often
Making pressure	307	2,84	1,01	At times
Cooperating	307	3,73	1,08	Often
Appreciating	307	3,64	1,16	Often
Consulting	307	3,63	1,10	Often
Using Personal Intimacy	307	2,69	1,27	At times
Coalition with Others	307	2,82	1,22	At times
Individual Peace	307	3,67	,973	High
Relational Peace	307	3,70	,995	High
Peace Disturbers	307	2,23	,927	Low
Organizational Peace (Total)	307	3,70	,857	High

When Table 1 is examined, it is seen that among the influence tactics used by school principals, the dimension of compliance with the rules has the highest average ($\bar{x}$=3.88) and the dimension of using personal intimacy has the lowest average ($\bar{x}$=2.69). According to teacher perceptions, it is seen that school principals are using tactics of reciprocation, pressure, personal intimacy, coalition with others, appreciation, compliance with the rules, informing, persuasion through reason, consultation, encouraging demand, and cooperation. In addition, in the findings obtained, teachers' perceptions of peace were high in the dimensions of individual peace ($\bar{x}$=3.67), relational peace ($\bar{x}$=3.70) and overall scale ($\bar{x}$=3.70) but low in the peace disturbers subdimension ($\bar{x}$=2.23).

A Pearson Product Moments Correlation Coefficient Analysis was conducted in order to determine the correlations between the influence tactics used by school principals and teachers' organizational peace and sub-dimensions. The results are given in Table 2.

Table 2. Correlation Values of Influence Tactics Used by School Principals and Organizational Peace of Teachers

Scales		Personel Peace	Relational Peace	Peace Disturbers	Organizational Peace (Total)
Persuasion Through Reason	r	,510**	,583**	-,286**	,550**
Responding	r	,130*	,196**	,113*	,112*
Making an Incentive Request	r	,433**	,527**	-,183**	,466**
Compliance with the Rules	r	,436**	,484**	-,151**	,438**
İnforming	r	,387**	,422**	-,078	,370**

Making pressure	r	-,298**	-,260**	,585**	-,398**
Cooperating	r	,493**	,563**	-,226**	,518**
Appreciating	r	,354**	,365**	-,044	,322**
Consulting	r	,437**	,501**	-,140*	,444**
Using Personal Intimacy	r	,129*	,171**	,285**	,053
Coalition with Others	r	,144*	,175**	,262**	,067

*.p<.05 **p<.01 N:307

According to Table 2, various relationships were determined between the dimensions of influence tactics used by school administrators and the total and sub-dimensions of organizational peace. It was found that between the sum of the organizational peace scale and persuasion through reason (r = .550; p< .01), encouraging demand (r = .466; p< .01), compliance with rules (r = .438 p< .01), cooperation (r = .518; p< .01), consultation (r = .444; p< .01) a moderate, positive correlation; informing (r = .370) ; p< .01), appreciation (r = .322; p< .01), responsiveness (r = .112; p< .05), a low-level positive correlation; and a moderate negative correlation between suppression (r = -.398; p< .01). When the relations between the sub-dimensions of the organizational peace scale and the tactics of influence are examined, low positive correlations were found between influence tactics and the tactics of responding, using personal intimacy, and forming coalitions with others. In addition, the relationship between the individual peace dimension of the organizational peace scale and the influence tactics [persuasion by reason (r = .510; p< .01); making an incentive request (r = .433; p< .01); compliance with the rules (r = .436; p< .01); cooperating (r = .493; p< .01); consultation (r = .437; p< .01)] mostly positive and moderate. Similarly, there was a correlation between the relational peace dimension of the organizational peace scale and influencing tactics [persuasion by reason (r = .583; p< .01); making an incentive request (r = .527; p< .01); compliance with the rules (r = .484 p< .01); informing (r = .422; p< .01); cooperating (r = .563; p< .01); consultation (r = .501; p< .01)] mostly positive and moderate relationships were detected. However, only with the pressure tactic (r = -.298; p< .01); (r = -.260; p< .01) negative correlation was found. Contrary to this, between the subscale of disturbers and influence tactics [persuasion by reason (r = -.286; p< .01); making an incentive request (r = -.183; p< .01); compliance with the rules (r = -.151 p< .01); information (r = -.078; p< .01); cooperating (r = -.226; p< .01); appreciation (r = -.044; p< .01); consultation (r = -.140; p< .01)] mostly negative and low-level relations were detected, while positive and moderate relations with the pressure tactic (r = .585; p< .01) , responding (r = .113; p< .01), using personal intimacy (r = .285; p< .01), and forming a coalition with others (r = .262; p< .01) tactics were found to have a low positive correlation.

Regression Analysis results regarding whether the influence tactics used by school principals are significant predictors of organizational peace and sub-dimensions are given in Table 3.

Table 3. Results of Multiple Regression Analysis Regarding the Predictive Relationships Between Influence Tactics Used by School Principals and Organizational Peace of Teachers

Variables	Predictive Variables (Influenced Behavior Scale Dimensions for Employees)					
		B	Std. Err.	β	t	p
	Constant	2,168	,233		9,30	,000
	Persuasion Through Reason	,274	,075	,275	3,63	,000
	Responding	-,073	,044	-,102	-1,66	,097
	Making an Incentive Request	-,091	,088	-,096	-1,02	,306
	Compliance with the Rules	,189	,070	,192	2,70	,007
Predicted Variable (Individual Peace)	İnforming	-,018	,070	-,022	-,259	,796
	Making pressure	-,333	,050	-,347	-6,62	,000
	Cooperating	,220	,074	,245	2,97	,003
	Appreciating	-,005	,063	-,006	-,076	,940
	Consulting	,031	,076	,035	,406	,685
	Using Personal Intimacy	,048	,052	,063	,927	,355
	Coalition with Others	,081	,056	,102	1,44	,150
	R = ,649 R² = ,421 F (11-295) = 19,473 p=,000					
	Constant	1,763	,223		7,91	,000
	Persuasion Through Reason	,281	,072	,275	3,89	,000
Predicted Variable (Relational Peace)	Responding	-,053	,042	-,073	-1,27	,205
	Making an Incentive Request	,074	,085	,076	,870	,385
	Compliance with the Rules	,164	,067	,162	2,45	,015

İnforming	-,114	,067	-,132	-1,68	,093
Making pressure	-,296	,048	-,301	-6,15	,000
Cooperating	,290	,071	,316	4,09	,000
Appreciating	-,120	,061	-,140	-1,96	,050
Consulting	,084	,073	,093	1,14	,251
Using Personal Intimacy	,082	,049	,106	1,66	,097
Coalition with Others	,063	,054	,077	1,16	,245
R = ,702 R² = ,493 F (11-295) = 26,035 p=,000					
Constant	1,899	,216		8,80	,000
Persuasion Through Reason	-,211	,070	-,222	-3,02	,003
Responding	-,011	,040	-,017	-,280	,780
Making an Incentive Request	,039	,082	,044	,479	,633
Compliance with the Rules	-,070	,065	-,075	-1,08	,278
İnforming	,045	,065	,056	,689	,492
Making pressure	,459	,047	,501	9,84	,000
Cooperating	-,151	,069	-,177	-2,20	,028
Appreciating	,024	,059	,030	,414	,679
Consulting	-,023	,071	-,027	-,323	,747
Using Personal Intimacy	,111	,048	,153	2,31	,021
Coalition with Others	,039	,052	,052	,752	,453
R = ,673 R² = ,453 F (11-295) = 22,221 p=,000					
Constant	2,49	,187		13,33	,000
Persuasion Through Reason	,261	,060	,297	4,31	,000
Responding	-,044	,035	-,070	-1,25	,210
Making an Incentive Request	-,013	,071	-,016	-,186	,852
Compliance with the Rules	,150	,056	,172	2,66	,008
İnforming	-,062	,057	-,084	-1,10	,271
Making pressure	-,350	,040	-,414	-8,67	,000
Cooperating	,230	,059	,292	3,87	,000
Appreciating	-,055	,051	-,074	-1,07	,283
Consulting	,050	,061	,064	,812	,417
Using Personal Intimacy	,022	,042	,033	,526	,600
Coalition with Others	,044	,045	,063	,972	,332
R = ,720 R² = ,519 F (11-295) = 28,879 p=,000					

The "Predicted Variable (Peace Disturbers)" label spans the second block of rows, and "Predicted Variable (Organizational Peace Total)" spans the third block of rows.

It is seen that there is a significant relationship between influence tactics and teachers' perceptions of organizational peace (R= .720; R² = .519; F(11-295)= 28.879; p = .000). These predictive variables explain approximately 52% of the variance in perceptions of organizational peace. When the results of the regression coefficients are examined, persuasion through reason (t=4.31; p< .01), compliance with the rules (t=2.66; p< .01), pressure (t=-8.67; p<.01) and cooperation (t =3.87; p<.01) tactics can be said to be significant predictors of teachers' perceptions of organizational peace. According to the regression coefficient (β), the relative importance of the predictor variables on organizational peace follows: persuasion through reason (β=.297), cooperation (β=.292), compliance with rules (β=.172), consultation (β=.064), coalition with others (β=.063), using personal intimacy (β=.033), encouraging demand (β=-.016), reciprocation (β=-.070), appreciation (β=-.074), informing (β=-.084), and pressure (β=-.414).

It is seen that there is a moderate and significant relationship between influence tactics and teachers' individual peace (R= .649; R² = .421; F(11-295)= 19.473; p = .000), relational peace (R= .702; R² = .493; F(11-295) = 26.035; p = .000) peace disturbers (R= .673; R² = .453; F(11-295)= 22.221; p = .000) perceptions. These predictive variables explain approximately 42% of the variance in individual peace perceptions, 49% of the variance in relational peace perceptions, and approximately 45% of the variance in perceptions of disturbing people.

Conclusion, Discussion and Recommendations
According to teacher perceptions, school principals frequently use influence tactics such as persuasion, encouraging demand, compliance with rules, informing, cooperating, appreciating, and consulting. It can be said that school principals make logical and real inferences to influence their teachers, talk about values and ideals

with reference to the teacher, follow policies with legal basis, get help from other teachers for the teacher they try to influence, and support and help the teacher they want to influence. In the research, it was concluded that, according to teacher perceptions, school principals sometimes prefer to use the behaviors of reciprocating, putting pressure, using personal closeness, and forming coalitions with others. It can be said that when school principals ask a favor about a job from teachers, they prefer manipulative or stressful behavior tactics such as helping them in any task, reminding them frequently, being threatening, being friendly, and presenting this as an attractive behavior because these tactics may reduce the motivation and productivity of teachers.

In his study, Marangoz (2020) has concluded that according to teachers' perceptions, school principals frequently use influence tactics like personal intimacy, making encouraging demands, and appreciating, while they rarely use the tactics of forming coalitions with others and applying pressure. In this context, it can be said that tactics that support and motivate teachers are used more frequently by school principals. Yukl and Falbe (1990) found in their study that the influence tactics frequently used by corporate managers towards their employees were rational persuasion, encouraging demand, consultation, and appreciation. In Gözü's 2012 study conducted with employees working in different sectors, both in Turkey and in the United States, it was concluded that Turkish managers use the tactics of obeying the rules and pressure more, whereas American managers use consulting and rational persuasion tactics more. Higgins et al. (2003), Koşar and Pehlivan (2020), Dağlı and Çalık (2016) found in their studies that school administrators mostly used the tactic of complying with the rules and rarely used the tactics of personal intimacy and pressure. On the other hand, Taşçı and Eroğlu (2017) concluded that school principals frequently use rational persuasion and inspiration tactics. In the light of these results, it can be said that some findings of the study are similar to those of other studies (Carpenter, 2020; Dağlı & Çalık, 2016; Judge & Ferris, 2003; Koşar & Pehlivan, 2020; Yukl & Falbe, 1990) and different from the results of some studies (Gözü, 2012; Taşçı & Eroğlu, 2017). It is thought that, based on the perceptions of teachers, the reason for the differences in the influence tactics used by managers is the differences between teachers and their reactions. Furthermore, the school principal's character, mood, personality structure, and even perception of power may cause differences in the tactics he or she uses. Teachers' perceptions and attitudes towards their tasks, the relationship between them and their administrators, their past relationships, and the effectiveness of the administrator may also cause different perceptions of teachers regarding the influence tactics used. Teachers respond to the influence tactics used by school principals in the form of compliance, attachment, or resistance (Dubrin, 2014). For this reason, it can be said that managers change their influence tactics according to the type of power they want to use and the reactions they encounter.

In this study, it was concluded that teachers' perception of organizational peace is high. In accordance with the results, it has been interpreted that the teachers find the environments they work in peaceful, both individually and relationally, and that there are not many situations and phenomena that disturb their peace. This situation is thought to be positive for the development of educational organizations. When it is accepted that every manager has the goal of improving the organizational climate and culture, this situation is considered positive for educational organizations. The results obtained in this study are partially similar to those obtained in the study of Bozanoğlu (2020). In this study, it was concluded that while the perceptions of individual peace, relational peace, and general peace were at a moderate level, the disturbances were at a low level. Yaman et al. (2010) stated that for a happy school environment, teachers should feel peaceful and safe; in that way, peace within the school can be achieved. In this context, it can be said that the low perception of disturbers indicates that there is a happy environment in schools.

When the relationships between the influence tactics used by the school principals and the teachers' perceptions of organizational peace were examined, it was concluded that there were many positive, medium-level, and low-level relationships. Besides, moderate and low-level negative relationships were also detected. Teachers need the support of school principals for the problems they encounter while working in the organization. According to Koşar and Pehlivan (2020), it is indispensable for managers to use influence tactics in these situations. Therefore, it is highly recommended that school principals endeavor to make their teachers happier, safer, and more peaceful (Kramer, 2009) and use influence tactics to show their managerial skills (Yukl, 2013). The fact that most of the rational and soft tactics have positive and moderate relations with the total organizational peace scale and individual, relational peace dimensions can be said to be an indication that the influence tactics used to affect the perception of peace positively. It is accepted that this situation will increase the quality of relationships within the organization (Knippenberg & Steensma, 2003) and managerial efficiency (Falbe & Yukl, 1992).

It has been concluded that there are mostly negative and low-level relationships between influence tactics and the disturbers sub-dimension; positive and low-level relationships between influence tactics and the responding, using personal intimacy, and forming coalitions with others. It can be accepted as a positive situation that many

tactics that are accepted as soft and rational conflict with disturbing behaviors and attitudes. It can be said that the harsh tactics used by the managers do not make the employees happy (Çetin & Polat, 2021) and may lead to unsuccessful results in fulfilling the desired behavior (Cerni et al., 2014).

It was concluded that there is a moderately negative relationship between pressure tactics and organizational and individual peace, a lowly negative relationship between relational peace, and a moderately positive relationship between peace disturbers. It can be said that pressure, which is accepted as a harsh tactic, negatively affects the perception of peace because it involves coercion. The power distance between the manager and the employee (Seçkin & Tikici, 2021) and the feeling of uncertainty that the employee who wants to be influenced may encounter in the face of the manager's request (Yukl & Falbe, 1990) can negatively affect the employee's perception of peace. It can be said that such harsh tactics are a product of an abusive management approach, regardless of their intended use (Tepper, 2000). In addition, the fact that the manager and employees do not know each other enough, the belief that the views of the manager and the employee can be integrated, and the existence of prejudice that a peaceful working environment will be provided can cause employees to perceive the influence tactic as harsh and negative.

When we look at the regression analysis results of the influence tactics used by school principals, the tactics of persuasion through reason, compliance with the rules, pressure, and cooperation significantly predict the dimensions of individual peace, relational peace, and organizational peace. It was concluded that the pressure tactic negatively predicted the dimensions of individual peace, relational peace, and organizational peace, while persuasion through reason, compliance with the rules, and cooperation positively predicted the dimensions of individual peace, relational peace, and organizational peace.

Thus, it can be said that as long as the school principals use the tactics of persuasion, compliance with the rules, and cooperation, the teachers' perceptions of individual peace, relational peace, and organizational peace increase, while their perceptions of individual peace, relational peace, and organizational peace decrease when they use the tactic of pressure. The tactics of persuasion, pressure, cooperation, and personal intimacy used by school principals significantly predict the peace disturbers dimension. It was concluded that while using pressure and personal intimacy positively predicted the disturbers dimension, the tactics of persuasion through reason and cooperation negatively predicted the disturbers dimension. Thus, it can be said that when school principals use the tactics of pressure and personal intimacy, teachers' perceptions of peace disturbers increase, and when they use the tactics of persuasion through reason and cooperation, teachers' perceptions of peace disturbers decrease. When we look at the national and international literature, we have not found any research that studies both concepts together. However, it has been seen that rational and soft influence tactics give positive results with positive concepts, while hard tactics give negative results (Drew, 2010; Faeth, 2004; Schriesheim & Hinkin, 1990; Tekben & Koşar, 2019; Yukl, 2013). In addition, it has been determined that organizational peace, individual peace, and relational peace give positive results with the concepts that can be considered positive, while the disturbers give negative results (Bacanlı, 2016; Demirci & Ekşi, 2017; Konan & Bozanoğlu, 2020). In the light of all this data, influence tactics, which are accepted as soft and rational, affect teachers' perceptions of individual, relational, and organizational peace positively and their perceptions of disturbers negatively. It was concluded that the harsh tactics used by the administrators negatively affected the teachers' perceptions of individual, relational, and organizational peace and positively affected the perceptions of disturbers.

In summary, regardless of the tactics used, the employee's perception of peace is affected significantly. If the tactics chosen by the managers according to the current situation, events, and facts are reasonable, they positively affect the attitude, behavior, and perception of the employee (Yukl, 2013). According to Bozanoğlu (2020), Benz, and Frey (2004), being happy and peaceful affects the productivity of the employee, though it does not appear directly in the hierarchy of needs. Taking such emotional satisfactions into account allows the subordinates to perceive and interpret the attempt to influence better and plays a crucial role in the success of this attempt (Ammeter et al., 2002). Based on all these expressions, the manager is expected to have the ability to manage employees and to act as a political actor when necessary (Yukl, 2013). It is stated that the clumsy use of the influence tactic will cause the chosen tactic to fail even if it is the most appropriate tactic for the current situation (Falbe & Yukl, 1992). The unsuccessful attempt to influence will inevitably affect the feelings of peace, happiness, and commitment within the organization.

Although teachers have a low perception of peace disturbers, it is expected that every administrator should have ideals to minimize or even eliminate the factors that disturb the peace. For this reason, it is possible to apply questionnaires that will enable teachers to express the disturbing factors in the school environment and to organize the organizational environment in light of the obtained data. Additionally, in this study, it was

determined that school principals sometimes use harsh influence tactics, and especially the tactic of pressure, which is an important factor that disturbs the peace. It is recommended that school principals increase the frequency of their use of soft and rational tactics such as persuasion through reason and cooperation instead of preferring hard tactics. In the study, in which it was determined that the perceptions of organizational peace were positively affected if the teachers were consulted, it is suggested to introduce legal regulations that will ensure the effective participation of teachers in the decisions to be taken about the school. Studying the relationship between the influence format of the influence tactics scale (for administrators) and the organizational peace of teachers can generate remarkable data and ideas about the mutual perceptions of administrators and employees. Regardless of the category of influence tactic used, it affects organizational peace. As a result, it should be ensured that the ability to use influence tactics is important, and therefore the managers should increase their technical strength to ensure the location, time, and employee-specific planning of the tactic they will use. Finally, it is considered that the literature on the concept of organizational peace is limited, so it is important to increase the work on organizational peace.

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Authors Contribution Rate

The authors contributed equally to the related research. Therefore, each author is equally responsible.

Conflicts of Interest

The authors declare that they have no conflict of interest.

Ethical Approval

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References

Ammeter, A. P., Douglas, C., Gardner, W. L., Hochwarter, W. A., & Ferris, G. R. (2002). Toward a political theory of leadership. *Leadership Quarterly*, 13, 751–796

Ancheta, A. J., Bruzzese, J. M., & Hughes, T. L. (2021). The impact of positive school climate on suicidality and mental health among LGBTQ adolescents: A systematic review. The Journal of School Nursing, 37(2), 75-86.

Ansari, M. A., & Kapoor, A. (1987). Organizational context and upward influence tactics. *Organizational behavior and human decision processes, 40*(1), 39-49.

Aslan, M., Özer, N., & Bakır, A. (2009). Okul kültürüne ilişkin yönetici ve öğretmen görüşleri: Nitel bir araştırma. *İlköğretim Online 8*(1), 268-281.

Aydın, İ., & Pehlivan, Z. (2010). Strategies and personality types used by primary school principals in Turkey to influence teacher (Ankara case), influence teachers. *Procedia Social and Behavioral Sciences*, 2, 3652-3659.

Bacanlı, H. (2016, 7-10 April). Nasıl huzurlu olunur? Benlik açısından huzur modeli. *Uluslararası Manevi Rehberlik Kongresi*. Istanbul.

Barbuto Jr, J. E., & Moss, J. A. (2006). Dispositional effects in intra-organizational influence tactics: A meta-analytic review. *Journal of Leadership & Organizational Studies, 12*(3), 30-48.

Benz, M., & Frey, B. S. (2004). Being independent raises happiness at work. *Swedish Economic Policy Review*, 11(2), 95-134.

Bozanoğlu, B., & Konan, N. (2020). Örgütsel huzur ölçeği geçerlik ve güvenirlik çalışması, *E-Uluslararası Eğitim Araştırmaları Dergisi*, 11(3), 1-15.

Bozanoğlu, B. (2020). *Öğretmenlerde iş yeri arkadaşlığı, mesleki doyum ve örgütsel huzur ilişkisi* (Unpublished doctorate dissertation). Inonu University, Turkey.

Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2016). *Bilimsel araştırma yöntemleri*. Pegem Akademi.

Cerni, T., Curtis, G.J., & Colmar, S. H. (2014). Cognitive-experiential leadership model: How leaders' information-processing systems can influence leadership styles, influence tactics, conflict management, and organizational outcomes. *Journal of Leadership Studies*, 8(3), 26-39.

Charbonneau, D. (2004). Influence tactics and perceptions of transformational leadership. *Leadership and Organization Development Journal, 25*(7), 565-576.

Chhokar, J., Brodbeck, F., & House, R. (2007). *Culture and leadership across the world*. Psychology Press.

Cialdini, R. B. (2001). *İknanın psikolojisi: Teorik ve pratik bir arada*. Media Cat.

Çetin, S., & Polat, S. (2021). Ortaokul öğretmenlerinin örgütsel adalet algı düzeyleri ile örgütsel mutluluk düzeyleri arasındaki ilişki. *MANAS Sosyal Araştırmalar Dergisi, 10*(1), 171-182.

Dağlı, E., & Çalık, T. (2015). İlköğretim okullarında müdürlerin kullandıkları etkileme taktiklerinin öğretmenlerin örgütsel vatandaşlık davranışları ve okul farkındalığı ile ilişkisi. *Kuram ve Uygulamada Eğitim Yönetimi, 22*(1). 29-58.

Demirci, İ., & Ekşi, H. (2018). Keep calm and be happy: A mixed method study from character strengths to well-being. *Educational Sciences: Theory and Practice, 18,* 303–354.

Drew, G. (2010). Issues and challenges in higher education leadership: Engaging for change. *The Australian Educational Rresearcher, 37*(3), 57-76.

Dubrin, A. J. (2014). *Leadership.* Houghton Mifflin.

Faeth, M. A. (2004). *Power, authority and influence: A comparative study of the behavioral influence tactics used by lay and ordained leaders in the episcopal church* (Unpublished doctorate dissertation). Virginia Polytechnic Institute and State University, USA.

Falbe, C. M., & Yukl, G. (1992). Consequences to managers of using single influence tactics and combinations of tactics. *Academy of Management Journal, 35*(3), 638- 653.

French, J. P., & Raven, B. (1959). The bases of social power. D. Cartwright (Ed.), *Studies in social power* (s. 150-167). Institute for Social Research.

Friedman, D., & Berkovich, I. (2020). Influence tactics and "second-order" change in schools: case study research of principals' political behaviors and strategies. International Journal of Educational Management, 35(1), 327-339.

Glenn, D. I. (1992). Determining sample size. A series of the Program Evaluation and Organizational Development. University of Florida, Publication date: November.

Gözü, C. (2012). *Influence tactics and leadership effectiveness in Turkey and USA: Mediating role of subordinate commitment* (Unpublished doctorate dissertation). State University of New York At Albany, USA.

Haimann, T. (1962). *Professional management theory and practice.* Houghton Mifflin.

Higgins, C. A., Judge, T. A., & Ferris, G. R. (2003). Influence tactics and work outcomes: A meta-analysis. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 24*(1), 89-106.

Kapoutsis, I., Papalexandris, A., & Thanos, I. C. (2019). Hard, soft or ambidextrous? Which influence style promotes managers' task performance and the role of political skill. The International Journal of Human Resource Management, 30(4), 618-647.

Karasar, N. (2014). *Bilimsel araştırma yöntemleri*. Nobel.

Kipnis, D., Schmidt, S. M., & Wilkinson, I. (1980). Intraorganizational influence tactics: Explorations in getting one's way. *Journal of Applied Psychology*, *65*(4), 440-452.

Kondakçı, Y., & Zayim, M. (2013). Yönetim süreçleri. S. Özdemir (Ed.), *Eğitim yönetiminde kuram ve uygulama* içinde (s. 9-57). Pegem Akademi.

Koşar, D. (2016). Liderlerin etkileme taktikleri. N. Güçlü (Ed.), *Eğitim yönetiminde liderlik teori, araştırma ve uygulama* içinde (s. 217-244). Pegem Akademi.

Koşar, S., & Pehlivan, Ü. (2020) İlköğretim kurum yöneticilerin kullandıkları etkileme taktikleri ile öğretmenlerin örgütsel bağlılığı arasındaki ilişki. *Eğitim ve Bilim, 45*(201), 293-311.

Kramer, R. M. (2009). *Organizational trust a reader.* Oxford University Press.

Marangoz, E. H. (2020). *Okul müdürleri tarafından kullanılan etkileme taktiklerine ilişkin öğretmen ve okul yöneticilerinin görüşlerinin incelenmesi* (Unpublished master dissertation). Gaziantep University, Turkey.

Mintzberg, H. (2009). *Power in around organizations. englewood cliffs.* PrenticeHall.

Mishra, J., & Morrissey, M. A. (1990). Trust in employee/employer relationships: A survey of West Michigan managers. *Public Personnel Management, 19* (4), 443-443.

Pfeffer, J. (1992). *Managing with power: Politics and influence in organizations.* Harvard Business School Press.

Plutchik, R. (2001). The nature of emotions: Human emotions have deep evolutionary roots, a fact that may explain their complexity and provide tools for clinical practice. *American Scientist, 89*(4), 344-350.

Schriesheim, C. A., & Hinkin, T. R. (1990). Influence tactics used by subordinates: A theoretical and empirical analysis and refinement of the Kipnis, Schmidt, and Wilkinson subscales. *Journal of Applied Psychology, 75*(3), 246-257.

Tabachnick, B.G., & Fidell, L.S. (2013). *Using multivariate statistics.* Pearson.

Taşçı, D., & Eroğlu, E. (2007). Yöneticilerin kişilik özellikleri ile kullandıkları ikna ve etkileme taktiklerinin kullanım sıklığı arasındaki ilişkinin değerlendirilmesi. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,* 17, 533-546.

Tekben, İ., & Koşar, D. (2019). The relationship between organizational commitment of teachers and influence tactics adopted by secondary school principals. *Inonu University Journal of the Faculty of Education, 20*(3), 987-1007.

Tepper, B. J. (2000). Consequences of abusive supervision. *Academy of Management Journal*, 43, 178–190.

Werner, I. (1993). *Liderlik ve yönetim* (V. Üner, Çev.). Rota.

Yaman, E., Vidinlioğlu, Ö., & Çitemel, N. (2010). İş yerinde psikoşiddet, motivasyon ve huzur: Öğretmenler çok şey mi bekliyor? Psikoşiddet mağduru öğretmenler üzerine. *Uluslararası İnsan Bilimleri Dergisi, 7*(1), 1136-1151.

Yang, Y. & Green, S.B. (2011). Coefficient alpha: a reliability coefficient for the 21st century? Journal of Psychoeducational Assessment. 29(4) 377-392.

Yukl, G. (2013). *Leadership in organizations*. Upper Saddle River, Pearson Prentice Hall.

Yukl, G., & Falbe, C. M. (1990). Influence tactics and objectives in upward, downward, and lateral influence attempts. *Journal of Applied Psychology*, *75*(2), 132-140.

Yukl, G., Seifert, C. F., & Chavez, C. (2008). Validation of the extended influence behavior questionnaire. *The Leadership Quarterly*, *19*(5), 609-621.

School Culture Types as Predictors of School Leadership Capacity

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School Culture Types as Predictors of School Leadership Capacity

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Abstract

The purpose of this study is to determine the role of school culture types on perceived school leadership capacity according to teachers' views. The study group for this research, which was designed in the relational research model, consisted of 483 teachers working in public schools. Data were collected with the "School Culture Scale" and "Leadership Capacity Scale". Arithmetic mean values were used to analyze the data, and Pearson Correlation Coefficients were calculated to determine the relationships between variables. A hierarchical regression analysis was performed to determine how each of the school culture types played a role in school leadership capacity; administrative experience was coded as a dummy variable and included in the first step of the analysis as a control variable. The findings showed that the most dominant culture type in schools was task culture, and the least dominant culture type was bureaucratic culture. The hierarchical regression results showed that the status of having been a manager was a significant predictor of the perception of school leadership capacity. However, it was concluded that achievement culture and support culture were significant predictors of school leadership capacity perception, but task and bureaucratic cultures were not significant predictors. Moreover, it was found that support culture alone and together with achievement culture played a positive role on school leadership capacity, but with the addition of task and bureaucratic culture characteristics to the regression analysis, the effect of support culture on leadership capacity lost its meaning. Based on the results, various suggestions were developed.

Keywords: School culture, School culture types, School leadership capacity

Introduction

Another concept that has been shaped along with the concepts of culture and organizational culture is the concept of school culture. The concept of school culture, which deals with the school in a much more specific context compared to the concepts of culture and organizational culture, deals with the common beliefs, values, traditions, and practices that play a role in shaping the identity of a school (Deal & Peterson, 2016). School culture, which is shaped by the collective attitudes, behaviors, and relationships of stakeholders such as students, teachers, and administrators within the school, is an effective factor in the formation of expectations, values, and practices based on the interactions and behaviors between stakeholders (Turan & Bektaş, 2013). Similar to organizational culture, there are various components within school culture that support the general structure and character of a school. One of the most prominent among these components is shared beliefs and values. Beliefs and values adopted by stakeholders guide decision-making processes within the school organization, influence interactions, and play a role in school priorities (Kadı & Beytekin, 2015).

Administrators and school leaders, who are among the stakeholders, are also important in the formation of school culture. According to Deal and Peterson (2016), school leaders also have a formative effect on school culture. In this three-stage shaping process, school leaders begin by understanding the historical knowledge and values of the culture, then identify the cultural elements that support the purpose and mission, and finally resort to transformative shaping that emphasizes the positive aspects of school culture. Considering the influence of school leaders, various classifications of school culture have been made. The first of these classifications is the achievement culture as defined by Pheysey (1993) and Cooke & Szumal (1993). At the heart of the achievement culture is the goal of getting things done and achieving goals and outcomes. In addition to this, the concept of individual responsibility is one of the most important terms in the achievement culture (Cooke & Szumal, 1993). Another title in the cultural classification is support culture. This expression, which is adopted in the literature as collaborative culture (Cameron & Quinn, 2006; Kilian, 1999; Saphier & King, 1985) as well as support culture (Pheysey, 1993), emphasizes mutual relationships and interpersonal commitment within the school culture. Other keywords in this culture include collective concepts such as cooperation, trust, participation in

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decision-making, teamwork, a sense of unity, employee participation, and shared values. Another type of culture is the task culture, which focuses on organizational goals (Harrison, 1972; Handy, 1981). In this type of culture, getting things done and expertise are at the forefront, and ability comes before seniority and status. Task culture, which takes a systematic perspective, involves starting with defining the problem, evaluating resources, and identifying solutions. In this context, the emphasis is on achieving organizational goals rather than individual responsibilities and gains. Bureaucratic culture, which is the dimension of cultural classification, deals with a more rigid and control-oriented structure (Vries & Miller, 1986; Kilian, 1999; Kono, 1990). In a bureaucratic culture where a rational perspective is adopted, concepts such as policies, standard processes, and definitions come to the forefront, and there is a structure in which the top management controls the organization. In short, school leaders play an effective role in the process of shaping school culture by understanding historical information, identifying cultural elements that support purpose and mission, and emphasizing positive transformation. School culture can be defined by different cultural classifications such as achievement, support, task, and bureaucracy.

In addition to its place in theory, organizational culture has been one of the practical issues studied in employee behavior and performance. Providing a strong and positive organizational culture within an organization can lead to positive increases in various metrics such as productivity, job satisfaction, and the overall performance of employees (Ilham, 2018; Ismail et al., 2015). On the other hand, a negatively positioned organizational culture can have negative effects on employee behavior and organizational outcomes (Aarons et al., 2017). In studies on organizational culture, shaping employee behavior has been one of the prominent topics. When individuals are in a positive culture, their motivation for their roles increases, and proactive behaviors emerge. Another issue addressed by organizational culture is the determination of standards for performance. Culture plays a role in defining standards for successful performance within an organization, and when employees internalize these standards, they focus on meeting them and play a role in improving performance outcomes (Cheung et al., 2011; Lunenburg, 2011). Another issue in the context of organizational culture is communication and collaboration. Communication and cooperation, which are at the foundation of organizations, come to the forefront in the working processes between employees. In a positive organizational culture, open communication, respect, and teamwork are supported, which in turn encourages knowledge sharing and plays a role in increasing problem-solving skills, innovation, and performance (Ali et al., 2002; Nir et al., 2012). In the 21st century, the concepts of adaptability and change, which are frequently emphasized, are at the heart of a strong organizational culture. When employees are involved in a culture that is open to change and encourages learning and growth, they embrace new initiatives, adapt to conditions, and actively participate in change management processes (Parent & Lovelace, 2018; Rashid et al., 2004). All of the components discussed above as organizational effects of culture are closely related to the phenomenon of leadership. Within the scope of organizational culture, leaders who adopt and promote cultural values have the capacity to inspire their employees in all matters related to organizational goals by creating a positive working environment (Tohidi & Jabbari, 2012). Nowadays, it is very popular to consider leadership as a potential that is spread throughout the organization rather than a quality or responsibility belonging to a single person or group (Kılınç & Özdemir, 2016). From this point of view, when addressing school culture and leadership, it would be appropriate to consider leadership as a kind of capacity that encompasses school stakeholders in general rather than as a position.

In the 21st century, the frequently emphasized concepts of change and transformation have revealed the importance of development. In this direction, the concept of school improvement has emerged within the scope of educational institutions. The concept of school improvement emphasizes increasing capacity in the context of change, transformation, and quality, ensuring quality educational practices, harmonizing stakeholders within the school, and increasing student achievement (Harris, 2010). One dimension of school improvement efforts is the development of leadership capacity in schools. The concept of leadership capacity is defined as a concept in which the leadership process is based on broad-based and skill-based participation, taking into account all stakeholders and processes (Harris & Lambert, 2003; Lambert, 2003). In general terms, leadership capacity is examined under two headings: individual leadership capacity and organizational leadership capacity (Lambert, 2003). While individual leadership capacity deals with the leadership potential that the individual possesses, organizational leadership capacity emphasizes a culture within the organization in which the organization can provide self-leadership and be self-sufficient. Leadership capacity is also examined in sub-headings according to the focus of the organization. In the school context, leadership capacity includes elements such as sharing authority and responsibility, collaborative teamwork, mutual trust, and joint commitment among educational stakeholders. Lambert (1998), who investigates the basic assumptions about school culture and leadership capacity in educational organizations, addresses four basic assumptions. These assumptions are that the theory of leadership traits is outdated, leadership is a learning process that addresses structural changes, collective understanding is the basis, and learning is a shared experience among employees. The classification created by Lambert (1998) is presented with a matrix that addresses the depth of involvement and the depth of skills

possessed. According to this matrix, schools are examined in four quadrants: school administrators, programs, stakeholders, responsibility, inclusiveness, and student achievement.

When the literature is reviewed, it is seen that there are studies on school culture and leadership capacity in schools. For example, Cansoy and Parlar (2017) focused on a group of high school teachers and investigated the relationship between school culture and teacher leadership. The findings showed that teachers perceived school cultures as primarily task-oriented, while their perceptions of teacher leadership focused on organizational development. The study also revealed that there is a positive and significant relationship between school culture and teacher leadership. In terms of predictors, it was concluded that support-oriented and task-oriented cultures were positive predictors of teacher leadership in the organizational development dimension, while achievement-oriented and bureaucratic cultures were positive predictors of teacher leadership in the professional development dimension. In addition, support-oriented, task-oriented, and achievement-oriented cultures were found to be positive predictors of teacher leadership in the dimension of collaboration with colleagues. A similar study on teachers was conducted with high school teachers in the context of Myanmar (Latt & Ye, 2021). In this study, which aimed to investigate the relationship between teachers' perceptions of leadership capacities and organizational culture, a significant but weak relationship was found between perceptions of school leadership capacities and organizational culture. Studies on organizational culture and leadership capacities can also be found at the higher education level. For example, Aung and Ye (2022) focused on the lecturers at a university in Myanmar and examined the relationship between leadership capacity and organizational culture. The findings of the study revealed that there was a moderately positive relationship between lecturers' perceptions of their leadership capacity and organizational culture. Another global study focused on teachers in the USA and examined the relationship between teachers' leadership capacities and campus culture (Harris & Kemp-Graham, 2017). In the mixed-methods study, it was reported that there was a statistically significant relationship between teachers' leadership capacity and campus culture. In his study, Lai (2015) focused on the leadership practices used by school principals to develop school capacity. As a result of his interviews with school principals, he emphasized that encouraging teacher participation and supporting teacher learning in the context of school culture, building school-community connections to facilitate student learning, and aligning external demands and internal conditions of the school were the practices used.

Studies in the literature show that there is a close relationship between school culture and perceived leadership capacity in schools in terms of theory and practice. The purpose of this study is to determine what role school culture types play in the perceived leadership capacity of schools according to teachers' views. Beyond the theoretical discussion of the determinant relationship between school culture and leadership capacity, which is being examined in the context of this research, empirical studies such as Neimann and Kotze (2006) and Tonich (2021) show that all kinds of leadership activities and behaviors in school, The theoretical foundations of the research hypotheses can be based on the results obtained from the aforementioned studies. It can be thought that this study, which is designed with the understanding that different types of culture can exist in a school at the same time but with different weights and not with a classifying approach to school culture, has the potential to fill an important gap in the field in terms of examining the resultant effect of complex and intertwined subcultures on the phenomenon of leadership. In this context, answers to the following research questions were sought:

1. What are the cultural types and leadership capacities of schools?
2. What is the relationship between school culture types and leadership capacities?
3. Are school culture types significant predictors of schools' leadership capacities?

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Method

In this study, the relationships between organizational culture types and the leadership capacity of schools were examined. Therefore, a relational survey model was used in the study, and quantitative techniques were used to analyze the data collected from the participants.

Participants

This study, in which the relationships between organizational culture types and leadership capacity were determined, was conducted with teachers working in public schools in Kütahya. The data were collected from the study group, and no population-sample determination was made. In this framework, the study group for the research consisted of 483 teachers. Information about the participants is presented in Table 1.

Table 1. Descriptive statistics of the sample

		f	*%*
Gender	Female	246	50,9
	Male	237	49.1
Working Year	1-10 years	92	19
	11-20 years	191	39.5
	21 or above	200	41.4
Education Status	Bachelor degree	447	92.5
	Master/Doctorate	36	7.5
Management Experience	Yes	133	27.5
	No	350	72.5
Total		483	

As seen in Table 1, 50.9% of the 483 teachers participating in the study were female and 49.1% were male. Nineteen percent of the teachers had 1–10 years of seniority, 39.5 percent had 11–20 years of seniority, and 41.4 percent had 21 years or more. Considering the educational status of the participants, the number of teachers with bachelor's degrees is 447, while the number of teachers with postgraduate degrees is 36. In addition, it was determined that 27.5% of the participants had administrative experience, while 72.5% had not been managers in their professional lives.

Data Collection Tools
In this study, the "Leadership Capacity in Schools Scale," developed by Lambert (2003) and adapted into Turkish by Kılınç (2013), was used to reveal teachers' views on the leadership capacity of schools. The "School Culture Scale," developed by Terzi (2005), was used to determine organizational cultures. The psychometric properties of the scales are as follows:
School Culture Scale: The scale used to determine school cultures consists of 29 items and four dimensions that define different organizational culture types. This five-point Likert-type scale consists of four different dimensions, namely "support culture, achievement culture, bureaucratic culture, and task culture", which cannot be scored in total. Support culture focuses on mutual trust, interpersonal commitment, helping, unity, common values, and employee participation (Kilian, 1999; Pheyseh, 1993). The achievement culture dimension aims to bring to the fore achieving organizational goals and outcomes and fulfilling individual responsibilities (Cooke & Szumal, 1993). Bureaucratic culture, on the other hand, has content such as supervision and control, standardized criteria, processes, and policies, and the preservation of hierarchy (Vries & Miller, 1986). Within the scope of the task culture dimension, there are objectives such as ensuring the harmony of expertise, authority, and responsibility and focusing on the results (Handy, 1981). As a result of the exploratory factor analysis (EFA), it was determined that the total variance explained by the four-factor structure was 50.965%. Cronbach's alpha internal consistency coefficients were calculated to determine the reliability of the scale dimensions; the related values were .88 in the "support culture" dimension, .82 in the "achievement culture" dimension, .76 in the "bureaucratic culture" dimension, and .74 in the "task culture" dimension (Terzi, 2005). Within the scope of this study, confirmatory factor analysis (CFA) was performed to determine whether the scale was valid or not, and the relevant values were found as [$\chi2/df$ =3.69 (p>05); CFI=.98; RMSEA=0.07]. Cronbach's alpha coefficients calculated for the reliability of the scale .93 for "support culture" dimension; .91 for "achievement culture" dimension; .85 for "bureaucratic culture" dimension; and .91 for the "task culture" dimension. When all the values calculated for validity and reliability were evaluated, it was decided that the school culture scale is a valid and reliable tool that can be used within the scope of this study (Kline, 2011).
Scale of Leadership Capacity in Schools: At the end of the adaptation process of the scale used to determine the leadership capacities in schools into Turkish, it was decided that the structure consisting of 30 items and four dimensions was appropriate. In this context, the scale consisted of "distributive leadership, collaboration, shared responsibility, shared school vision, and perceived student achievement" dimensions. The goodness of fit values obtained as a result of CFA were [$\chi2/df$ =2.47 (p>05); CFI= .98; RMSEA=0.07]. Cranbach Alpha coefficients were calculated as .91 for the "distributive leadership" dimension, .91 for the "collaboration and shared responsibility" dimension; .94 for "shared school vision" dimension; .93 for the "perceived student achievement" dimension; and .97 for the whole scale. Based on the values, it was concluded that the scale was valid and reliable scale (Kılınç, 2013). In order to determine whether the scale is a valid and reliable instrument that can be used within the scope of this research, a CFA was conducted and reliability coefficients were calculated. In this context, CFA values were calculated as [$\chi2/df$ =4.19 (p>05); CFI= .98; RMSEA=0.08]. Internal consistency coefficients were calculated as .90 for the "distributive leadership" dimension; .90 for the "collaboration and shared responsibility" dimension; .92 for the "shared school vision" dimension; .92 for the

"perceived student achievement" dimension; and .97 for the whole scale. When the results of the analysis were evaluated as a whole, it was decided that the leadership capacity scale was a valid and reliable instrument that could be used in this study (Kline, 2011).

Data Collection and Analysis

This study was conducted with teachers working in public schools in Kütahya. The data were collected from 483 teachers who agreed to participate in the study. Before the analyses were conducted within the scope of the research, missing data were determined, and extreme value analyses were performed. The validity and reliability of the scales were analyzed. The kurtosis and skewness coefficients and scatter plots of the data were analyzed to determine whether the collected data were normally distributed. The kurtosis and skewness coefficients were found to be between -1 and +1. The related coefficients and the analyzed graphs showed that the data indicated a normal distribution.

In the analysis of the data in line with the objectives, the arithmetic mean and standard deviation values were calculated from descriptive statistics. Pearson correlation coefficients were calculated to determine the relationships between organizational culture types and school leadership capacity and its dimensions; hierarchical regression analysis was performed to determine the predictive power of each organizational culture type on school leadership capacity. The reason for using hierarchical regression analysis is that the design of the research is based on the assumption that each of the types of culture in the school organization exists at the same time, even if they are of different severity. Hierarchical regression analysis allows for the detection of interactions that are added to each other, starting with the most related culture type as a result of the correlation analysis. Before the regression analysis, tolerance, VIF, and Durbin-Watson values were examined to determine whether there was a multicollinearity problem. Since the tolerance value was greater than 0.1, the VIF value was less than 10, and the Durbin-Watson coefficient was less than 2, it was concluded that there was no multicollinearity problem (Çokluk, 2010). In the first stage of the analysis in the hierarchical regression, "having been a manager or not" was used as a control variable and coded as a dummy variable. In the other stages of the analysis, culture types were included in the analysis from the highest to the lowest correlation coefficients with school leadership capacity.

Results and Discussion

Firstly, the arithmetic means and standard deviations of school culture types and school leadership capacity and dimensions were calculated. Descriptive statistics for the related variables are given in Table 2.

Table 2. Descriptive statistics of variables

	$\bar{X}$	sd
Organizational Culture Types		
Support Culture	3.24	.87796
Success Culture	3.24	.88591
Bureaucratic Culture	2.89	.65900
Task Culture	3.46	.85806
School Leadership Capacity	2.83	.58871
Distributive Leadership	2.74	.66025
Collaboration and Shared Responsibility	2.87	.62748
Shared School Vision	2.82	.61729
Perceived Student Success	2.90	.61304

As it is understood from Table 2, the arithmetic averages of school culture types according to teachers' opinions are between 2.89 and 3.46, and the highest average belongs to the task culture. In terms of school leadership capacities, it was seen that the general average was $\bar{X}$=2.83; the lowest average belonged to the distributive leadership dimension ($\bar{X}$=2.74), and the highest average belonged to the perceived student achievement dimension ($\bar{X}$=2.90).

Secondly, the relationships between school cultures and school leadership capacity were determined. Table 3 shows the correlation coefficients calculated between the related variables.

Table 3. Correlation coefficients for the relationships between school cultures and school leadership capacity

	Support Culture	Success Culture	Bureaucratic Culture	Task Culture
School Leadership Capacity	**.452**[**]	**.456**[**]	**.254**[**]	**.394**[**]
Distributive Leadership	.403[**]	.403[**]	.250[**]	.325[**]
Collaboration and Shared Responsibility	.398[**]	.414[**]	.232[**]	.347[**]
Shared School Vision	.441[**]	.449[**]	.253[**]	.387[**]
Perceived Student Success	.458[**]	.450[**]	.223[**]	.421[**]

The correlation coefficients given in Table 3 show that there are positive relationships between all organizational culture types and school leadership capacities. In this context, it is seen that the culture type with the highest correlation with school leadership capacity is achievement culture [(r = .46; p < .01)] and the culture type with the lowest correlation is bureaucratic culture [(r = .25; p < .01)].
The results of the regression analysis based on the last research question of the study are presented in Table 4.

Table 4. Hierarchical regression analysis results for the prediction of school leadership capacity

Predictive Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	β	t	β	t	β	t	β	t	β	t
Management Experience	,107	2,370*	,092	2,273*	,095	2,355*	,097	2,400*	,098	2,430*
Success Culture			,453	11,214*	,254	2,629*	,227	2,277*	,226	2,269*
Support Culture					,219	2,274*	,187	1,856	,180	1,778
Task Culture							,073	1,093	,063	,926
Bureaucratic Culture									,030	,622
R^2	.012		.217		.225		.227		.228	
ΔR^2	.012		.205		.008		.002		.001	
F	5.618*		66.410*		46.382*		35.099*		28.121*	

A total hierarchical model was used in the hierarchical regression analysis of the main hypothesis of the study, which is the prediction of school culture types on the level of school leadership capacity. In the first model, there is a demographic variable coded as a dummy variable related to whether the participants have administrative experience or not. The effect of the participant's administrative experience on the level of school leadership capacity perception is statistically significant (t:2,370 p<.05) and explains 1.2% of the variance in the dependent variable (R^2:0.012 F:5.618). In other words, having administrative experience positively affects teachers' perceptions of the school's leadership capacity level.
In the second model, in addition to managerial experience, the achievement culture type, which has the highest correlation with the dependent variable, was included among the school culture types. The effect of management experience (t:2,273 p<.05) and achievement culture (t:11,214 p<.05) variables in the second model on the perceived level of school leadership capacity is statistically significant. The change in the variance explained in the dependent variable with the addition of the achievement culture variable in the second model is 20.5% (ΔR^2:0.205 F:66.410). In other words, the effect of an achievement-oriented culture in the school on the perceived level of school leadership capacity is positive and quite high. The effect of the administrative experience variable continues to be significant in the second model.
In the third model of the hierarchical regression, the support culture variable is included in addition to the independent variables in the previous model. The effect of support culture on the perceived level of school leadership capacity is statistically significant (t: 2,274 p<.05) and its contribution to the total variance explained is 0.8% (ΔR^2: 0.008 F: 46.382). In other words, the support-oriented culture in schools has a positive and significant, even if limited, effect on the perceived leadership capacity level of the school. The significant effects of the independent variables in the previous model, administrative experience (t:2,355 p<.05) and achievement culture (t:2,629 p<.05) on the perceived level of school leadership capacity continue in the third model.
In the fourth regression model, in addition to the variables in the third model, task culture was included in the regression model as an independent variable. The effect of task culture on the perceived level of school leadership capacity was not statistically significant (t: 1,093 p>.05). With the inclusion of the task culture

variable in the model, the support culture variable in the previous model lost its significant effect on the perceived school leadership capacity level (t: 1,856 p>.05). The significant effects of administrative experience (t: 2,400 p<.05) and achievement culture (t: 2,227 p<.05) variables continue. The total variance explained in the fourth model is 22.7% (R^2: .227 F: 35,099).

In the fifth and final model of the hierarchical regression analysis, the bureaucratic culture variable was used in addition to the variables in the previous model. There is no statistically significant effect of the bureaucratic culture variable on the perceived level of school leadership capacity (t: 0.622 p>.05). While the effect of support culture (t:1,178 p>.05) and task culture (t:0,926 p>.05) among the variables in the previous model was not significant in this model, it is seen that the variables of administrative experience (t:2,430 p<.05) and achievement culture (t:2,269 p<.05) maintained their significant effects. With the last model, the total variance explained is 22.8% (R^2: .228 F: 28.121).

Conclusion

The first conclusion that can be drawn from the research is about which culture type is dominant in schools. The categorization of culture types in schools is not done by determining which culture type a school has, but by determining the level of each culture type in a school. For example, the characteristics of the four different culture types discussed in this study are present in almost every school. However, some of these cultural types may be more or less dominant than others. Following these explanations, the results of the study show that the most dominant culture type in the sampled schools is task culture. Task culture is followed by achievement culture and support culture. The least common type of culture is bureaucratic culture. From this point of view, it can be said that schools are dominated by teachers who are dedicated to their profession, who do not refrain from using their expertise to achieve the instructional and social goals of the school, and who have a high sense of duty. However, although our education system has a centralized structure, we see that the effects of bureaucratic culture, which is a type of culture focused on bureaucracy, continuation of the status quo, hierarchical relations, and sharply separated job descriptions, are relatively weak. When the literature is examined, it is seen that similar results were reached in the studies conducted by Işık (2017), Özdemir (2012), and Sezgin (2010).

Another important result is related to the effect of administrative experience on the perception of leadership capacity in schools. Having administrative experience positively affects teachers' perceptions of leadership capacity in schools. This result shows that experience and awareness of managerial practices contribute to the development of positive attitudes among stakeholders towards taking initiative, participating in decisions, being interested in the success of all students, and developing positive attitudes towards the goals and functions of the school in the education and training process within the school. In the studies conducted by Akçay & Sevinç (2021) and Gül (2016), findings supporting this result were included.

It is seen that achievement culture is an important predictor of perceived leadership capacity at all levels of the multiple models used in the study. Achievement culture, by its nature, focuses on elements such as keeping the level of achievement of organizational goals as high as possible, willingness to take individual responsibility, and appreciation of success. Perceived leadership capacity, on the other hand, is composed of components such as sharing the vision of the organization, sharing authority and responsibility, and focusing on success. As can be seen, both variables are closely related to the effectiveness and development of the school as an organization. The reason for the positive effect of achievement culture on perceived leadership capacity is that both theoretical and practical frameworks are built on similar assumptions and beliefs. Similar results were found in the studies of Peker & Demirhan (2021) and Kujur & Ye (2018).

It is noteworthy that while support culture has a significant and positive effect on perceived leadership capacity in the third model, it loses its significant effect with the inclusion of task culture and bureaucratic culture in the fourth and fifth models. It is quite understandable that support culture, which has prosocial and altruistic behaviors and attitudes such as good interpersonal relations and commitment, cooperation, integration around common values, and participation, affects the perception of leadership capacity, which is based on the acceptance of leadership as a shared authority and responsibility spread throughout the organization. However, with the inclusion of elements related to task culture and bureaucratic culture, which are relatively more rigid, supercilious, standardizing, and controlling culture types, in the predictor model, it can be explained that prosocial attitudes and behaviors are suppressed, thus the effect of support culture on the perception of school leadership capacity tends to decrease.

Recommendations

Considering that school culture is a living and dynamic phenomenon, efforts should be made to build a culture that can help schools achieve their instructional and social goals or to transform the existing culture in this direction. It is also very important that the structural and legal system in which the school exists be redesigned

by policymakers to allow and support this transformation. Future research should focus on studies that can describe the cultural dimensions of school organizations in a more specific and detailed way and that can raise awareness that leadership, which is critical for school development, is not a matter of status and authority but a phenomenon of shared and inclusive capacity that is the responsibility of all stakeholders.

Conflicts of Interest

There are no potential conflicts of interest.

Ethical Approval

Ethical permission (05.07.2023 / 2023-155) was obtained from Uşak University Ethical Commission for this research.

References

Aarons, G. A., Ehrhart, M. G., Farahnak, L. R., Sklar, M., & Horowitz, J. (2017). Discrepancies in leader and follower ratings of transformational leadership: Relationship with organizational culture in mental health. *Administration and Policy in Mental Health and Mental Health Services Research*, 44, 480-491.

Akçay, P. & Sevinç, H. H. (2021). Okul Yöneticilerinin Algılanan Yönetim Tarzları ve Öğretmenlerin Özerkliği Üzerine Bir Araştırma . *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi* , 41 (2) , 1173-1201 . DOI: 10.17152/gefad.906997

Ali, I. M., Pascoe, C., & Warne, L. (2002). Interactions of organizational culture and collaboration in working and learning. *Journal of Educational Technology & Society*, 5(2), 60-68.

Aung, T., & Ye, Y. (2022). The Relationship Between Lecturers' Perceptions Of Their Leadership Capacity And Organizational Culture At Strategy First University, Yangon, Myanmar. *Scholar: Human Sciences*, 14(2), 89. Retrieved From http://www.assumptionjournal.au.edu/index.php/scholar/article/view/5335

Cameron, K., & Quinn, R. E. (2006). *Diagnosing and changing organizational culture (edición revisada)*. San Francisco, CA, EE UU.: Jossey-Bass.

Cansoy, R., & Parlar, H. (2017). Examining the relationship between school culture and teacher leadership. *International Online Journal of Educational Sciences*, 9(2).

Cheung, S. O., Wong, P. S., & Wu, A. W. (2011). Towards an organizational culture framework in construction. *International Journal of Project Management*, 29(1), 33-44.

Cooke, R.& Szumal, J.L (1993). Measuring normative beliefs and shared behavioral expectations in organizations. *Psychological Reports*. 72, 1299-1330.

Çokluk. Ö. (2010). Lojistik regresyon analizi: Kavram ve uygulama. *Kuram ve Uygulamada Eğitim Bilimleri*, 10(3), 1357-1407.

Deal, T. E., & Peterson, K. D. (2016). *Shaping school culture*. John Wiley & Sons.

Gül, F. Ö. (2016). *Eğitimsel liderlik uygulamaları bağlamında öğretmen özerkliğinin incelenmesi*, (Yayınlanmamış Yüksek Lisans Tezi). Marmara Üniversitesi, Eğitim Bilimleri Enstitüsü, İstanbul.

Handy, C.B. (1981). *Understanding organization* (second edition). Aylesbury: Hazell Watson Ltd.

Harris, A. (2010). Leading system transformation. *School Leadership & Management*, 30(3), 197–207. https://doi.org/10.1080/13632434.2010.494080

Harris, A., & Lambert, L. (2003). *Building Leadership Capacity for School Improvement*. McGraw-Hill Education.

Harris, D., & Kemp-Graham, K.Y. (2016). The relationship between building teacher leadership capacity and campus culture. *Education Leadership Review of Doctoral Research*. 49-74.

Harrison, R. (1972). Understanding your organization's character. *Harvard Business Review* May-June.

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, 2(1). https://doi.org/10.9707/2307-0919.1014

Ilham, R. (2018). The impact of organizational culture and leadership style on job satisfaction and employee performance. *Journal of Advanced Management Science*, 6(1), 50-53.

Ismail, S., Romle, A. R., & Azmar, N. A. (2015). The impact of organizational culture on job satisfaction in higher education institution. *International Journal of Administration and Governance*, 1(4), 14-19.

Işık, H., (2017). Ortaokullarda okul kültürünün incelenmesi. *İstanbul Aydın Üniversitesi Dergisi*, 9(3), 61-71.

Kadı, A., & Beytekin, O. F. (2015). Okul kültürü ve örgütsel muhalefet davranışları arasındaki ilişkinin mesleki değerler aracılığıyla araştırılması. *Kalem Eğitim ve İnsan Bilimleri Dergisi*, 5(1), 71-97.

Kılınç, A. Ç. (2013). *İlköğretim okullarında liderlik kapasitesinin belirlenmesi*. Doktora Tezi, Gazi Üniversitesi. Eğitim Bilimleri Enstitüsü.

Kılınç, A. Ç. & Özdemir, S. (2016). *Liderlik kapasitesi*. ANKARA: Pegem Akademi.

Kilian, C. (1999). The Two Sides of the School Culture Coin. *Technos*, 8(3), 21-23.

Kline, R. B. (2011). *Principles and practice of structural equation modeling*. New York: The Guilford Press.

Kono, T. (1990). Corporate culture and long-range planning. *Long Range Planning*, 23(4), 9-19.

Kujur, P., & Ye, Y. (2018). The relatıonshıp of teachers'perceptıon towards leadershıp capacıty and organızatıonal culture ın the marıanısts schools, Indıa. *Scholar: Human Sciences*, 10(1), 298-298.

Lai, E. (2015). Enacting principal leadership: Exploiting situated possibilities to build school capacity for change. *Research Papers in Education*, 30(1), 70-94.

Lambert, L. (1998). *Building leadership capacity in schools*. ASCD.

Lambert, L. (2003). Leadership capacity for lasting school improvement. Alexandria, Virginia: Association for Supervision and Curriculum Development.Latt, Z. T., & Ye, Y. (2021). A study of the relationship between teachers' perceptions of their leadership capacity and organizational culture at the basic education high schools in Thanbyuzayat Township, Mon State, Myanmar. *Scholar: Human Sciences*, 13(1), 176-191.

Lunenburg, F. C. (2011, November). Understanding organizational culture: A key leadership asset. *In National forum of educational administration and supervision journal* 29(4), 1-12.

Niemann, R., & Kotze, T. (2006). The relationship between leadership practices and organisational culture: an education management perspective. *South African Journal of Education*, 26(4), 609-624.

Nir, A. S., Ding, J. F., & Chou, C. C. (2012). Inter-organizational culture, trust, knowledge sharing, collaboration and performance in supply chain of maritime industries: Examining the linkages. *African Journal of Business Management*, 6(19), 5927.

Özdemir, S. (2012). İlköğretim okullarında okul kültürü ile örgütsel sağlık arasındaki ilişki. *Kuram ve Uygulamada Eğitim Yönetimi*, 4(4), 599-620.

Parent, J. D., & Lovelace, K. J. (2018). Employee engagement, positive organizational culture and individual adaptability. *On the Horizon*, 26(3), 206-214.

Peker, B. & Demirhan, G. (2022). Okullarda Liderlik Kapasitesi, Örgütsel Vatandaşlık Davranışı ve Örgüt Kültürü, *Gelecek Vizyonlar Dergisi*, 6(2), 1-17.

Pheysey D.C. (1993). *Organizational cultures: Types and transformations*. London: Routledge.

Rashid, Z. A., Sambasivan, M., & Rahman, A. A. (2004). The influence of organizational culture on attitudes toward organizational change. *Leadership & organization development Journal*. 25(2), 161-179.

Saphier, J., & King, M. (1985). Good seeds grow in strong cultures. *Educational leadership*, 42(6), 67-74.

Schein, E. H. (2010). Organizational culture and leadership (4th ed.). Jossey-Bass.

Sezgin, F. (2010). Öğretmenlerin örgütsel bağlılığının bir yordayıcısı olarak okul kültürü. *Eğitim ve Bilim*, 35(156).

Tonich, T. (2021). The role of principals' leadership abilities in improving school performance through the school culture. *Journal of Social Studies Education Research*, 12(1), 47-75.

Terzi, A. R. (2005). İlköğretim okullarında örgüt kültürü. *Kuram ve Uygulamada Eğitim Yönetimi*, 43, 423-442.

Tohidi, H., & Jabbari, M. M. (2012). Organizational culture and leadership. *Procedia-Social and Behavioral Sciences*, 31, 856-860.

Turan, S., & Bektas, F. (2013). The relationship between school culture and leadership practices. *Eurasian Journal of Educational Research*, 13.

Vries, M. F., & Miller, D. (1986). Personality, culture, and organization. *The Academy of Management Review*, 11(2), 266-279

Psychological Distress Mediates the Relationship Between Social Support and Satisfaction with Life

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Abstract

University students are susceptible to psychological issues due to various academic and social stressors in their lives. Decreased life satisfaction among these students can result in a wide variety of adverse outcomes, which can negatively impact their overall well-being and academic performance. The current study aims at examining the mediating role of psychological distress in the association between social support and life satisfaction. This cross-sectional study included 368 university students (F= 243, 66%; M= 125, 34%) from two public universities in Turkey. The research data were obtained utilizing the Brief Symptom Inventory, the Satisfaction with Life Scale, and the Multidimensional Scale of Perceived Social Support. The findings demonstrated that social support had a positive predictive effect on life satisfaction and a negative predictive effect on psychological distress. In addition, psychological distress negatively predicted life satisfaction. Moreover, the SEM analysis indicated that psychological distress played a partial mediating role in the association between social support and life satisfaction. These results highlight the importance of addressing social support and psychological distress in interventions aimed at increasing life satisfaction among university students.

Keywords: social support, psychological distress, life satisfaction

Introduction

The university years represent the transitional period from adolescence to young adulthood and are widely recognized as one of the most crucial developmental stages because of their substantial implications for individuals' identity formation and future orientation. Along with developmental tasks, individuals also have to contend with a wide variety of challenges during this period, such as adapting to a new social environment, managing academic pressures, coping with financial issues, and planning their future careers. Therefore, college students are more susceptible to psychological issues in comparison to the general population (Hunt & Eisenberg, 2010). Furthermore, the circumstances have further worsened for university students during the COVID-19 pandemic, where new stressors, e.g., disruption of normal routines, social isolation, and uncertainty about the future, have been added to their lives and where their social support systems have collapsed (Commodari et al., 2021; Sahu, 2020). Research has shown that, during this period, there was a dramatic increase in psychological problems, such as elevated psychological distress, mood disorders, and substance use disorders (Salimi et al., 2023), as well as a decrease in overall well-being and life satisfaction among university students (Rogowska et al., 2021).

Life satisfaction pertains to individuals' cognitive assessment of their current circumstances or the general quality of their life (Pavot & Diener, 1993). This subjective evaluation reflects the individuals' level of contentment with their lives and is widely acknowledged as a crucial factor in subjective well-being (Diener et al., 2002). When conceptualizing mental health, the positive psychology movement underscores the significance of resources, psychological strengths, and positive attributes that promote individual growth and progress rather than merely the absence of psychological problems (Kobau et al., 2011; Seligman, 2008). Life satisfaction functions as a dynamic mechanism that helps individuals maintain a stable mental state and a positive mood by regulating the detrimental emotional effects of adverse situations (Heller et al., 2006). Research has clearly demonstrated that satisfaction with life is closely associated with positive life outcomes such as physical and psychological well-being, positive emotions, academic achievement, happiness, and total life quality (Grant et

al., 2009; Odacı et al., 2021; Rode et al., 2005; Uysal et al., 2014). Conversely, dissatisfaction with life has been linked with higher levels of psychological distress and behavioral and emotional problems (Sæther, 2019). Furthermore, feelings of life dissatisfaction can endure and consistently exert a detrimental effect on an individual throughout their life. In a 20-year follow-up study, it was found that low life satisfaction during university years can lead to poorer health behaviors and an increased suicide risk in adulthood (Koivumaa-Honkanen et al., 2001). These findings highlight the significance of giving priority to policies that aim at improving mental health outcomes for students in the planning of the future direction of education. Therefore, it is crucial to understand and document the factors that influence university students' life satisfaction in order to guide preventive policies and interventions. Although previous research has revealed a significant connection between social support and life satisfaction (Mahanta & Aggarwal, 2013; Yalçın, 2011), further investigation is needed to understand the psychological processes that underlie this mechanism. In this vein, this study aims to investigate the mediation role of psychological distress in the linkage between social support and satisfaction with life.

Social Support and Life Satisfaction

As inherently social beings, people require the establishment of social relationships and connections with others for their survival and progress. Social support refers to practical, appraisal, informative, and/or emotional support given to an individual by people in their social network (Lakey & Cohen, 2000). However, it is significant from a psychological perspective to differentiate between received social support, which is the amount of support by others, and perceived social support, which refers to individuals' subjective perceptions as to being able to get help and being valued and cared about when they need it (Norris & Kaniasty, 1996). The authors underline that perceived social support is a more reliable predictor of mental well-being results (Cunningham & Barbee, 2000). Previous research has consistently shown that supportive social interactions are crucial for an individual's well-being, positive feelings, and overall satisfaction with life (Alorani & Alradaydeh, 2018; Harandi et al., 2017; Kerr et al., 2006). The main effect model and the buffering model, developed by Cohen & Wills (1985), explain how social support contributes to overall happiness, psychological health, and life satisfaction. According to the main effect model, accessing social support regularly provides one with positive experiences; therefore, it directly contributes to life satisfaction. This is supported by research that has consistently identified a positive link between social support and life satisfaction. For instance, Yalçın (2011) has found that social support is a robust predictor of satisfaction with life among Turkish university students. Similarly, other studies have reported positive associations between social support from the people in one's intimate circle and elevated life satisfaction among university students (Alorani & Alradaydeh, 2018; Chen et al., 2021; Schunk et al., 2021).

However, the buffering model proposes that a supportive social environment mitigates the detrimental effects of stressful events on psychological health by moderating the stress responses exhibited by individuals to these events (Cohen & Wills, 1985). According to this model, social support can reduce the potential negative effects of stress on life satisfaction by helping individuals to cope with challenging situations. Studies have demonstrated that social support moderates the association between stressors and life satisfaction (Che et al., 2018; Szkody & McKinney, 2019), indicating the presence of a buffering effect. Zhou & Lin (2016) have found that social support strengthens the link between the ability to adapt to campus life and life satisfaction in undergraduate freshmen. Furthermore, Talwar et al. (2013) have reported that positive and supportive relationships can protect university students against the negative effects of stress. In this vein, one can argue that social support can contribute to the life satisfaction of university students both directly and indirectly by mitigating the potential adverse effects of daily stress and other unwanted events on their psychological health.

The Mediating Role of Psychological Distress

Psychological distress denotes an unpleasant emotional or mental state that manifests through symptoms of discomfort, anxiety, depression, and other negative emotions (Ridner, 2004). It is a broad term encompassing a range of psychological symptoms and negative affective states that reflect an individual's subjective distress and reduced functional capacity. Therefore, elevated psychological distress is widely recognized as a significant indicator of poor mental status and psychological maladjustment (Drapeau et al., 2012; Mewton et al., 2016). The authors have emphasized that prolonged exposure to intense psychological distress can worsen an individual's mental health and increase the likelihood of developing psychiatric disorders over time (Kessler et al., 2009). Indeed, extensive research has shown that psychological distress can play a significant role in both the onset and persistence of a broad range of psychological problems, including depression, generalized anxiety

disorder, panic attacks, and suicidal thoughts (Eskin et al., 2016; Liang et al., 2020; Payton et al., 2009). Additionally, it has been linked to low self-esteem, diminished psychological well-being, and life dissatisfaction among university students (Duong, 2021; Kaya & Kaya, 2023; Kumar et al., 2016). In this context, it is reasonable to suggest that elevated psychological distress can disrupt the mental balance of university students and diminish their life satisfaction.

Drawing from the buffering model, this study focuses on the intermediary effect of psychological distress on the connection between university students' perceived social support and their sense of life satisfaction. The researchers who focus on the social determinants of mental health put an emphasis on social support as a protective factor (Turner et al., 1983). For instance, Smith & Hobbs (1966) argue that mental disorders are not only an individual phenomenon but are also related to deterioration in social support resources such as family, job, and friendship. Psychological distress is a maladaptive emotional response to stressful life events, such as trauma, loss, disasters, or major life changes. Therefore, it can be triggered or exacerbated by the stress burden stemming from adverse events, particularly when these challenges exceed an individual's coping capacity (Littleton et al., 2007; Watson et al., 2009). Conversely, when individuals perceive that they have access to supportive social resources that can help them cope with stressful events, they are less likely to experience psychological distress (Cohen & Wills, 1985). Consequently, social support may exert an indirect influence on satisfaction with life through a protective mechanism; it can alleviate the negative psychological consequences of challenging circumstances and reduce the intensity of psychological distress experienced by individuals. In other words, the beneficial impact of social support on life satisfaction may manifest indirectly through its mitigating effect on psychological distress (Figure 1).
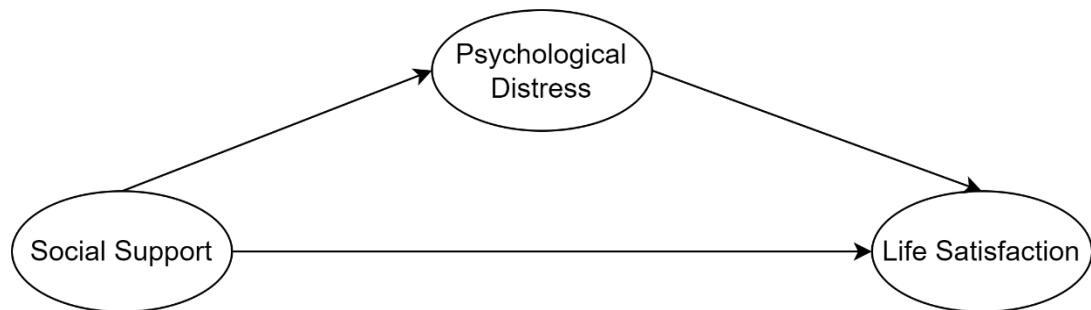
Figure 1. The hypothesized model

Method

Participants and Procedure

In this study, data were collected using the convenience sampling method. The study group comprised 368 (F= 243, 66%; M= 125, 34%) university students from two public universities in Turkey. Of the students, 38.9% (n=143) were in their first year, 25% (n=92) in their second, 18.5% (n=68) in their third, and 17.7% (n=65) in their fourth year. The average age of the sample was 20.63 (SD=2.62), with ages ranging from 18 to 29.

Prior to data collection, the necessary permission was obtained from the administrations of the universities. The research data were gathered through face-to-face surveys in classroom settings. All potential participants were willing to participate in the research process and provided a consent form. Additionally, they were made aware of their rights to withdraw from the study and the confidentiality of their responses.

Instruments

Multidimensional Scale of Perceived Social Support (MSPSS)

Zimet et al. (1990) developed the MSPSS to assess the degree of support perceived by an individual from their social environment. The MSPSS comprises 12 items and encompasses three dimensions, including family, friends, and significant others. Respondents rate each item using a Likert-type scale that spans 1 (Strongly

Disagree) to 7 (Strongly Agree). Each subscale includes four items. A total score can be computed by summing the scores of the subscales, resulting in a possible range of 12 to 84. A higher score indicates a higher perception of social support. The Turkish adaptation study of the MSPSS demonstrated that the Turkish version of the scale is a valid and reliable measure of perceived social support. The Cronbach's alpha coefficients were reported to range from .85 to .92 for the subscales and .89 for the overall scale (Eker et al., 2001). In this study, the Cronbach's alpha coefficients for the family, friends, significant other subscales, and the overall scale were found to be .75, .73, .70, and .88, respectively.

Satisfaction with Life Scale (SWLS)

The five-item SWLS was initially developed by Diener et al. (1985) and later adapted for Turkish by Dağlı & Baysal (2016). The participants are asked to rate five items on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The total scores can range from 5 to 25, with higher scores indicating higher life satisfaction. Consistent with its original form, the Turkish version of the SWLS demonstrated a unidimensional structure. In terms of reliability, the Cronbach's alpha coefficient was reported to be .88 (Dağlı & Baysal, 2016). In the current study, the Cronbach's alpha coefficient was determined to be .83.

Brief Symptom Inventory (BSI)

The BSI was constructed by selecting 53 items from the Symptom Checklist-90-R (SCL-90-R) to measure psychological symptoms. The Turkish version of the BSI assesses psychological symptoms in five domains: depression, anxiety, negative self-perception, somatization, and hostility. Participants rate each of the 53 items on a 5-point Likert scale (0=Not at all, 4=Very much) according to the frequency of experiencing the related symptom in the past seven days (Şahin & Durak, 1994). The BSI was determined to be a valid and reliable measure of psychological symptoms in the Turkish sample. Cronbach's alpha coefficients for its subscales have been reported to range from .75 (somatization) to .88 (depression) (Şahin & Durak, 1994). In this study, the Cronbach's alpha coefficients for the subscales of depression, anxiety, negative self-perception, somatization, and hostility were .90, .87, .74, .80, and .75, respectively.

Data Analysis

First, a data screening procedure was employed to check the dataset for erroneous entries, missing data, and outliers. As a result of this process, 17 outliers identified based on the Mahalanobis distance were removed from the dataset, and the missing values were imputed using the series mean method. It was determined that the skewness and kurtosis coefficients were between -2 and +2, and the Mardia statistic was less than 5, indicating that the multivariate normality assumption was met (Byrne, 2010).

Secondly, descriptive statistics and Pearson correlations were computed using the SPSS 26.0 statistical software package. To investigate the hypothesized mediation model, Structural Equation Modeling (SEM) analysis was performed using AMOS 22.0. In the construction of the structural model, the sub-dimensions of the MSPSS and the BSI were designated as indicators for the latent variables of social support and psychological distress. On the other hand, two indicator variables (LSP1 and LSP2) were derived from the SWLS for the life satisfaction latent variable using the parceling method. The fit of the hypothesis model to the data was evaluated based on the following indices: X^2/df, ≤ 5, CFI, $\geq .95$, TLI, ≥ 95, RMSEA, $\leq .06$, SRMR, $\leq .08$ (Byrne, 2010; Hu & Bentler, 1999). Finally, to assess the statistical significance of the indirect effect, a bootstrapping technique involving 5,000 bootstrapped samples and a 95% confidence interval was utilized.

Results

Preliminary Analysis

Descriptive statistics and Pearson correlations for all study variables are shown in Table 1. As expected, the correlation analysis demonstrated that there were negative correlations between the indicators of psychological distress and both the indicators of social support and the indicators of life satisfaction. Additionally, there were positive associations among the indicators of social support and the indicators of life satisfaction.

Table 1. Descriptive statistics and bivariate correlations

Variables	1	2	3	4	5	6	7	8	9	10
1.FAM[a]										
2.FRI[a]	.79**									
3.SO[a]	.64**	.71**								
4.ANX[b]	-.29**	-.22**	-.28**							
5.DEP[b]	-.40**	-.36**	-.35**	.78**						
6.NS-P[b]	-.28**	-.23**	-.30**	.83**	.79**					
7.SOM[b]	-.25**	-.21**	-.26**	.70**	.64**	.60**				
8.HOS[b]	-.15**	-.16**	-.25**	.69**	.65**	.67**	.50**			
9.LSP1[c]	.42**	.39**	.43**	-.27**	-.38**	-.30**	-.20**	-.24**		
10.LSP2[c]	.46**	.45**	.46**	-.29**	-.36**	-.30**	-.24**	-.26**	.71**	
Mean	19.63	18.42	21.03	12.34	15.73	11.06	6.73	6.79	9.25	5.80
SD	5.47	6.07	4.85	8.21	9.64	8.01	5.46	4.49	2.33	1.91
Skewness	-.49	-.22	-.71	1.07	.57	.79	1.05	.71	-.45	-.02
Kurtosis	-.55	-.88	.15	1.54	-.41	.24	.76	.08	.03	-.49

Note: [a]=Sub-dimension of MSPSS (FAM= Family, FRI=Friend, SO= Significant others)

[b]=Sub-dimensions of BSI (DEP=Depression, ANX=Anxiety, NS-P=Negative self-perception, SOM=Somatization, HOS=Hostility)

[c]=Parcels of SWLS (LSP1= Parcel 1, LSP2= Parcel 2)

Test of the measurement model

In the context of this study, before testing the structural model, the validity and reliability of the latent constructs derived from the indicator variables were assessed through a measurement model analysis. This model included three latent variables and 10 indicator variables. Initial analyses revealed that the measurement model had an acceptable fit to the data: X^2/df= 3.33; CFI= 97; TLI= 96; RMSEA= .080, p<.05, 90% CI (.063, .097), SRMR= .041. However, upon reviewing the modification indices, a covariance was added between the error terms of two indicators (Depression and Somatization) of psychological distress latent variable. Then, the analysis was repeated. The results of the SEM analysis revealed that the fit indices further improved after this modification: X^2/df = 2.98; CFI = 0.98; TLI = 0.96; RMSEA = .073, p < .05, 90% CI (.056, .091); SRMR = .041.

In addition, the standardized regression coefficients (factor loadings) ranged between .77 and .91 for the indicators of social support, between .69 and .91 for the indicators of psychological distress and between .80 and .88 for the indicators of life satisfaction. The fact that these factor loadings were higher .60 indicated that the latent variables in the model were sufficiently represented by their respective indicators. Moreover, for the latent variables of social support, psychological distress, and life satisfaction, the Average Variance Extracted (AVE) values were found to be .72, .69, and .71, respectively. The Composite Reliability (CR) values for these variables were observed as .88, .92, and .83, respectively. Consequently, considering the AVE and CR values exceeded the recommended thresholds of 0.50 and 0.60 (Fornell & Lacker, 1981), it can be concluded that the validity and reliability of the latent variables in the model are satisfactory.

Test of the structural model

After determining that the measurement model met the necessary statistical criteria, a structural model analysis was conducted to investigate the proposed relationships among the study variables. The results of the SEM analysis showed that the hypothesized model had a good model-data fit (X^2/df= 3.33; CFI= 97; TLI= 96; RMSEA= .080, p<.05, 90% CI (.063, .097), SRMR= .041). Then, based on recommendations from modification indices, a covariance was added between the error terms of two indicators (Depression and Somatization) of psychological distress latent variable. This revised model was accepted as the final model as the modifications yielded better fit indices (X^2/df = 2.98; CFI = 0.98; TLI = 0.96; RMSEA = .073, p < .05, 90% CI (.056, .091); SRMR = .041). Furthermore, it was found that all path coefficients in the final model were statistically significant. Specifically, social support positively predicted life satisfaction (β= .51, p<.01, 95% CI [.41, .61]) and negatively predicted psychological distress (β= -.36, p<.05, 95% CI [-.44, -.26]). In addition, psychological distress negatively explained life satisfaction (β= -.21, p<.01, 95% CI [-.33, -.11]). It is also important to note that the final model explained 39% of the variance in life satisfaction and 13% of the variance in psychological distress.
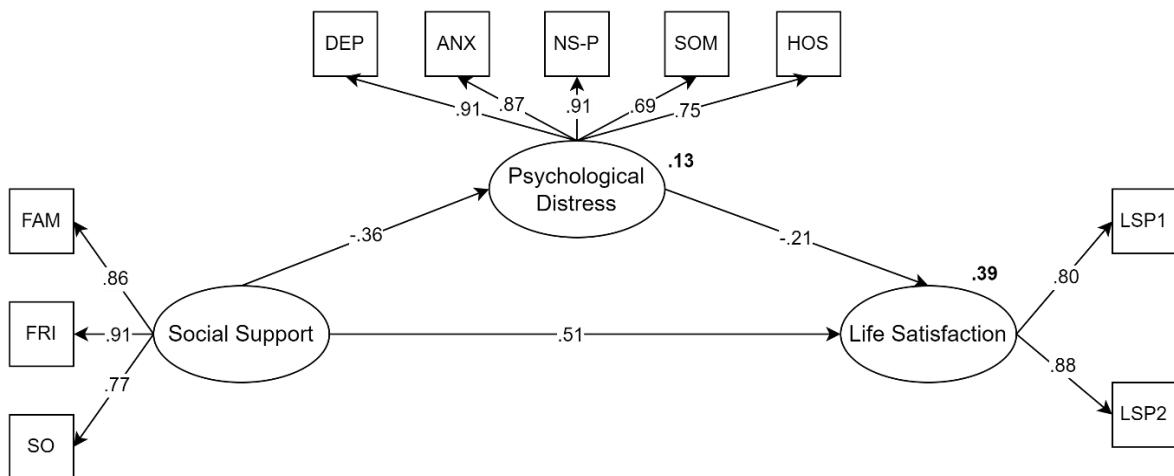
Figure 2. The final model

In order to evaluate the statistical significance of the indirect effect of social support, a bootstrapping procedure was run with 5000 bootstrap samples and a 95% confidence interval. As a result of this analysis, it was found that the standardized bootstrapped indirect effect was .08 and the 95% CI ranged from .04 to .13. The absence of the value "0" within the upper and lower bounds of the CI indicates a statistically significant mediation effect (Hayes, 2009). The standardized path coefficients for direct, indirect, and total effects among the variables are presented in Table 2.

Table 2. Standardized path coefficients for direct, indirect, and total effects

Model Pathways		β	95% CI	
			Lower	Upper
Direct effects				
Social support ⟶ Life satisfaction		.51**	.41	.61
Social support ⟶ P. distress		-.36*	-.44	-.26
P. distress ⟶ Life satisfaction		-.21**	-.33	-.11
İndirect effect				
Social support ⟶ P. distress ⟶ Life satisfaction		.08	.04	.13
Total effect				
Social support ⟶ Life satisfaction		.59	.50	.68

** p<.01 *p<.05

Discussion and Conclusion

Dissatisfaction with life among university students is a growing issue, which can negatively affect their overall psychological well-being and academic performance. Social support plays a significant role in mitigating these feelings and enhancing life satisfaction (Kasprzak, 2010). The aim of this study was to examine the mediating role of psychological distress in the relationship between social support and life satisfaction. The SEM results demonstrated that the hypothesized model yielded good fit indices and confirmed the proposed connections among the study variables.

Consistent with previous research (Alorani & Alradaydeh, 2018; Han et al., 2021; Harandi et al., 2017), the findings of this study revealed a positive association between perceived social support and satisfaction with life among university students. The beneficial effect of social support on life satisfaction can be argued through several mechanisms. Firstly, it is important to note that humans, as inherently social beings, need robust social bonds for growth and development. The presence of supportive relationships in an individual's social environment can provide them with numerous positive emotions, including a sense of belonging and feelings of being loved and accepted, which are fundamental human needs (Düşünceli, 2020). The authors underline that fulfillment of these psychological and social needs is highly related to positive feelings and high life evaluations, which in turn can lead to heightened states of well-being and overall life satisfaction (Tay & Diener, 2011). Therefore, it can be argued that having strong social connections characterized by mutual respect, empathy, cooperation, and support can directly enhance university students' life satisfaction by fulfilling their

fundamental needs and consistently offering them positive experiences and emotions. Secondly, life satisfaction represents an individual's cognitive assessment of various aspects of their life, which includes but is not limited to social relations, the attainment of personal goals, and physical and mental health (Bramhankar et al., 2023; Gilman & Huebner, 2003). Consequently, life satisfaction is not solely determined by external factors such as an individual's current circumstances, conditions, and opportunities. It is also influenced by internal psychological mechanisms that can direct this subjective evaluation process, such as self-esteem and self-concept (Chang et al., 2003; Moksnes & Espnes, 2013). Receiving support and validation from significant people in the social network can enhance university students' self-esteem and self-concept (Godwin et al., 2004), which in turn can contribute to higher levels of satisfaction with life.

A significant finding obtained in this study is that psychological distress mediates the relationship between social support and satisfaction with life. This means higher levels of perceived social support can mitigate psychological distress, which in turn can lead to greater satisfaction with life. Conversely, a decline in social support can lead to heightened psychological distress, resulting in decreased life satisfaction. The harmful effects of mental health problems, including elevated psychological distress, are well documented both in the general population (Lombardo et al., 2018) and among university students (Güngör et al., 2021; Ranđelović et al., 2014). Research has revealed that university students' mental health status plays a significant role in their satisfaction with life. Students with good mental health generally perceive their lives as more meaningful and satisfying, while those facing psychological issues like depression, anxiety, and stress tend to report lower life satisfaction (Bukhari & Saba, 2017; Güngör et al., 2021). Entering university life can bring about many new challenges and potential stressors for individuals. Kumar et al. (2016) have reported that more than 50% of students experience depressive symptoms due to difficulties in their academic and social lives, including academic expectations, worries about the future, inadequacy of social activities, family pressure, and other issues. Consequently, some students find it difficult to adjust to campus life, leading to heightened psychological stress. However, the findings obtained from the mediation analysis of this study suggest that social support can be a protective factor against such distress. Specifically, it was found that university students who perceive their social relationships as intimate and supportive and view their friends and family members as available during times of need are less likely to experience symptoms of psychological distress, such as anxiety, depressive feelings, and stress. This can be explained through the buffering effect of social support. According to this model, when individuals face challenges, the belief that others can offer the necessary resources can reduce their perception of the situation as threatening and/or enhance their coping abilities. Social support can mitigate the harmful effects of adverse events by providing a solution to the problem or by reducing its perceived importance (Lin et al., 1985). Consequently, this can alleviate the psychological distress that an individual might otherwise experience. As a result, social support can indirectly enhance life satisfaction by mitigating psychological distress.

Research has clearly shown that higher education institutions should also prioritize enhancing the mental health of university students beyond their traditional focus on academic outcomes (Wörfel et al., 2016). In this context, the findings of this study have significant implications for educators, university administrators, and policymakers. Specifically, the results highlight the importance of addressing social support and psychological distress in interventions and policies aimed at enhancing university students' mental health and satisfaction with life. Therefore, administrators and policymakers are encouraged to develop policies that increase student counseling services and ensure that both financial and psychological support services are accessible to all students. Additionally, administrators and educators can consider developing social integration programs to improve social relations and build strong social ties among students. Furthermore, attention should be given to the identification of risk groups for life dissatisfaction, such as those with elevated psychological distress and/or low perceived social support, and interventions should be developed for these students.

Limitations and Recommendations

Despite the contributions of this study, it is important to note that several limitations must be considered when interpreting the results. Firstly, this study employed a correlational design, which precludes making causal inferences among the research variables. Future research may consider adopting an experimental or longitudinal design to more precisely determine the causal direction of the relationships among social support, psychological distress, and life satisfaction discussed in this study. Second, this study focused on the mediating role of psychological distress in the relationship between perceived social support and life satisfaction. It would be interesting to investigate other psychological mechanisms that can direct this relationship, such as personality traits, self-esteem and academic engagement. Furthermore, future research may also focus on the potential mediating and moderating effects of contextual determinants, such as socioeconomic status and the availability

of support services, on the relationships among variables investigated in this study. Finally, since this study employed self-reported measures, the results may be susceptible to participant-induced errors, including common method bias and social desirability bias. To mitigate these potential biases, future studies could utilize multiple data sources, like qualitative interviews and instructor evaluations.

Author (s) Contribution Rate
Author 1 and author 2 collectively designed the study, performed the analysis and co-authored the paper.

Conflicts of Interest
There are no conflict of interest to declare.

Ethical Approval
This study was approved by Ethics committee of Yozgat Bozok University (17.03.2021, number: 20/06)

References

Alorani, O. I., & Alradaydeh, M. T. F. (2018). Spiritual well-being perceived social support, and life satisfaction among university students. *International Journal of Adolescence and Youth*, *23*(3), 291-298. https://doi.org/10.1080/02673843.2017.1352522

Bramhankar, M., Kundu, S., Pandey, M., Mishra, N. L., & Adarsh, A. (2023). An assessment of self-rated life satisfaction and its correlates with physical, mental and social health status among older adults in India. *Scientific Reports*, *13*(1), 9117. https://doi.org/10.1038/s41598-023-36041-3

Bukhari, S. R., & Saba, F. (2017). Depression, anxiety and stress as negative predictors of life satisfaction in university students. *Rawal Medical Journal*, *42*(2), 255-257.

Byrne, B. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). Routledge.

Chang, L., McBride-Chang, C., Stewart, S., & Au, E. (2003). Life satisfaction, self-concept, and family relations in Chinese adolescents and children. *International Journal of Behavioral Development*, *27*(2), 182-189. https://doi.org/10.1080/01650250244000182

Che, X., Cash, R., Ng, S. K., Fitzgerald, P., & Fitzgibbon, B. M. (2018). A systematic review of the processes underlying the main and the buffering effect of social support on the experience of pain. *The Clinical Journal of Pain*, *34*(11), 1061-1076. https://doi.org/10.1097/AJP.0000000000000624

Chen, X., Ma, Y., Wu, R., & Liu, X. (2021). Moderating roles of social support in the association between hope and life satisfaction among ethnic minority college students in China. *International Journal of Environmental Research and Public Health*, *18*(5), 2298. https://doi.org/10.3390/ijerph18052298

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310–357. https://doi.org/10.1037/0033-2909.98.2.310

Commodari, E., La Rosa, V. L., Carnemolla, G., & Parisi, J. (2021). The psychological impact of the lockdown on Italian university students during the first wave of COVID-19 pandemic: psychological experiences, health risk perceptions, distance learning, and future perspectives. *Mediterranean Journal of Clinical Psychology*, *9*(2), 1-19. https://doi.org/10.13129/2282-1619/mjcp-3009

Cunningham, M. R., & Barbee, A. P. (2000). Social support. In C. Hendrick & S. S. Hendrick (Eds.), *Close relationships: A sourcebook* (pp. 273–285). Sage.

Dağlı, A., & Baysal, N. (2016). Yaşam doyumu ölçeğinin Türkçe'ye uyarlanması: Geçerlik ve güvenirlik çalişması. *Elektronik Sosyal Bilimler Dergisi*, *15*(59), 1250-1262. https://doi.org/10.17755/esosder.263229

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*(1), 71-75. https://doi.org/10.1207/s15327752jpa4901_13

Diener, E., Lucas, R. E., & Oishi, S. (2002). Subjective well-being: The science of happiness and life satisfaction. In S. J. Lopez & C. R. Snyder (Eds.), *Handbook of positive psychology* (pp.187-194). Oxford University Press.

Drapeau, A., Marchand, A., & Beaulieu-Prévost, D. (2012). Epidemiology of psychological distress. In P. L. Labate, (Ed.), *Mental illnesses-understanding, prediction and control* (pp. 155-134). IntechOpen.

Duong, C. D. (2021). The impact of fear and anxiety of Covid-19 on life satisfaction: Psychological distress and sleep disturbance as mediators. *Personality and Individual Differences*, *178*, 110869. https://doi.org/10.1016/j.paid.2021.110869

Düşünceli, B., Çolak, T. S., Demir, S., & Koç, M., (2020). Examination of meeting the needs of university students from social support systems. *Journal of Measurement and Evaluation in Education and Psychology*, *11*(4), 346-361. https://doi.org/10.21031/epod.706475

Eker, D., Arkar, H., & Yaldız, H. (2001). Factorial structure, validity, and reliability of revised form of the multidimensional scale of perceived social support. *Turkish Journal of Psychiatry*, *12*(1), 17-25.

Eskin, M., Sun, J. M., Abuidhail, J., Yoshimasu, K., Kujan, O., Janghorbani, M., ... & Voracek, M. (2016). Suicidal behavior and psychological distress in university students: A 12-nation study. *Archives of Suicide Research*, *20*(3), 369-388. https://doi.org/10.1080/13811118.2015.1054055

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. https://doi.org/10.1177/002224378101800104

Gilman, R., & Huebner, S. (2003). A review of life satisfaction research with children and adolescents. *School Psychology Quarterly, 18*(2), 192–205. https://doi.org/10.1521/scpq.18.2.192.21858

Goodwin, R., Costa, P., & Adonu, J. (2004). Social support and its consequences: 'Positive' and 'deficiency' values and their implications for support and self-esteem. *British Journal of Social Psychology*, *43*(3), 465-474. https://doi.org/10.1348/0144666042038006

Grant, N., Wardle, J., & Steptoe, A. (2009). The relationship between life satisfaction and health behavior: a cross-cultural analysis of young adults. *International Journal of Behavioral Medicine*, *16*, 259-268. https://doi.org/10.1007/s12529-009-9032-x

Güngör, A., Young, M. E., & Sivo, S. A. (2021). Negative life events and psychological distress and life satisfaction in US college students: The moderating effects of optimism, hope, and gratitude. *Journal of Pedagogical Research, 5*(4), 62-75. https://dx.doi.org/10.33902/JPR.2021472963

Han, J., Leng, X., Gu, X., Li, Q., Wang, Y., & Chen, H. (2021). The role of neuroticism and subjective social status in the relationship between perceived social support and life satisfaction. *Personality and Individual Differences*, *168*, 110356. https://doi.org/10.1016/j.paid.2020.110356

Harandi, T. F., Taghinasab, M. M., & Nayeri, T. D. (2017). The correlation of social support with mental health: A meta-analysis. *Electronic Physician*, *9*(9), 5212-5222. https://doi.org/10.19082%2F5212

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, *76*(4), 408-420. https://doi.org/10.1080/03637750903310360

Heller, D., Watson, D., & Ilies, R. (2006). The dynamic process of life satisfaction. *Journal of Personality*, *74*(5), 1421-1450. https://doi.org/10.1111/j.1467-6494.2006.00415.x

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health*, *46*(1), 3-10. https://doi.org/10.1016/j.jadohealth.2009.08.008

Kasprzak, E. (2010). Perceived social support and life-satisfaction. *Polish Psychological Bulletin, 41*(4), 144-154. https://doi.org/10.2478/v10059-010-0019-x

Kaya, M. D., & Kaya, F. (2023). The relationship between self-silencing and general distress: Does self-esteem play a mediating role?. *Cyprus Turkish Journal of Psychiatry and Psychology, 5*(2), 95-104. https://doi.org/10.35365/ctjpp.23.2.01

Kerr, D. C., Preuss, L. J., & King, C. A. (2006). Suicidal adolescents' social support from family and peers: Gender-specific associations with psychopathology. *Journal of Abnormal Child Psychology*, *34*(1), 99-110. https://doi.org/10.1007/s10802-005-9005-8

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Chatterji, S., Lee, S., Ormel, J., ... & Wang, P. S. (2009). The global burden of mental disorders: an update from the WHO World Mental Health (WMH) surveys. *Epidemiology and Psychiatric Sciences*, *18*(1), 23-33. https://doi.org/10.1017/S1121189X00001421

Kobau, R., Seligman, M. E., Peterson, C., Diener, E., Zack, M. M., Chapman, D., & Thompson, W. (2011). Mental health promotion in public health: Perspectives and strategies from positive psychology. *American Journal of Public Health*, *101*(8), e1-e9. https://doi.org/10.2105/AJPH.2010.300083

Koivumaa-Honkanen, H., Honkanen, R., Viinamaeki, H., Heikkilae, K., Kaprio, J., & Koskenvuo, M. (2001). Life satisfaction and suicide: A 20-year follow-up study. *American Journal of Psychiatry*, *158*(3), 433-439. https://doi.org/10.1176/appi.ajp.158.3.433

Kumar, H., Shaheen, A., Rasool, I. & shafi, M. (2016). Psychological distress and life satisfaction among university students. *Journal of Psychology & Clinical Psychiatry*, *5*(3), 00283. https://doi.org/10.15406/jpcpy.2016.05.00283

Lakey, B, & Cohen, S. (2000). Social support theory and measurement. In S. Cohen, L. G. Underwood, & B. J. Gottlieb (Eds.), *Social support measurement and intervention* (pp. 29-53). Oxford University Press.

Liang, L., Gao, T., Ren, H., Cao, R., Qin, Z., Hu, Y., ... & Mei, S. (2020). Post-traumatic stress disorder and psychological distress in Chinese youths following the COVID-19 emergency. *Journal of Health Psychology*, *25*(9), 1164-1175. https://doi.org/10.1177/1359105320937057

Lin, N., Woelfel, M. W., & Light, S. C. (1985). The buffering effect of social support subsequent to an important life event. *Journal of Health and Social Behavior*, 247-263. https://doi.org/10.2307/2136756

Littleton, H., Horsley, S., John, S., & Nelson, D. V. (2007). Trauma coping strategies and psychological distress: A meta-analysis. *Journal of Traumatic Stress: Official Publication of the International Society for Traumatic Stress Studies*, *20*(6), 977-988. https://doi.org/10.1002/jts.20276

Lombardo, P., Jones, W., Wang, L., Shen, X., & Goldner, E. M. (2018). The fundamental association between mental health and life satisfaction: Results from successive waves of a Canadian national survey. *BMC Public Health*, *18*(1), 1-9. https://doi.org/10.1186/s12889-018-5235-x

Mahanta, D., & Aggarwal, M. (2013). Effect of perceived social support on life satisfaction of university students. *European Academic Research*, *1*(6), 1083-1094.

Mewton, L., Kessler, R. C., Slade, T., Hobbs, M. J., Brownhill, L., Birrell, L., … & Andrews, G. (2016). The psychometric properties of the Kessler Psychological Distress Scale (K6) in a general population sample of adolescents. *Psychological Assessment, 28*(10), 1232–1242. https://doi.org/10.1037/pas0000239

Moksnes, U. K., & Espnes, G. A. (2013). Self-esteem and life satisfaction in adolescents—gender and age as potential moderators. *Quality of Life Research*, *22*, 2921-2928. https://doi.org/10.1007/s11136-013-0427-4

Norris, F. H., & Kaniasty, K. (1996). Received and perceived social support in times of stress: a test of the social support deterioration deterrence model. *Journal of Personality and Social Psychology*, *71*(3), 498-511. https://doi.org/10.1037/0022-3514.71.3.498

Odacı, H., Kaya, F., & Kınık, Ö. (2021). Genel iyi oluş ölçeği kısa formu'nun Türkçeye uyarlama çalışması. *Dokuz Eylül Üniversitesi Buca Eğitim Fakültesi Dergisi*, (52), 97-111. https://doi.org/10.53444/deubefd.841481

Pavot, W., & Diener, E. (1993). Review of the Satisfaction With Life Scale. *Psychological Assessment, 5*(2), 164–172. https://doi.org/10.1037/1040-3590.5.2.164

Payton, A. R. (2009). Mental health, mental illness, and psychological distress: same continuum or distinct phenomena?. *Journal of health and Social Behavior*, *50*(2), 213-227. https://doi.org/10.1177/002214650905000207

Ranđelović, D., Krstić, M., & Babić-Antić, J. (2014). Academic success, anxiety and depressiveness as the predictors of life satisfaction among the students. *Journal of Educational and Instructional Studies in the World*, *4*(4), 63-73.

Ridner, S. H. (2004). Psychological distress: concept analysis. *Journal of Advanced Nursing*, *45*(5), 536-545. https://doi.org/10.1046/j.1365-2648.2003.02938.x

Rode, J. C., Arthaud-Day, M. L., Mooney, C. H., Near, J. P., Baldwin, T. T., Bommer, W. H., & Rubin, R. S. (2005). Life satisfaction and student performance. *Academy of Management Learning & Education*, *4*(4), 421-433. https://doi.org/10.5465/amle.2005.19086784

Rogowska, A. M., Ochnik, D., Kuśnierz, C., Jakubiak, M., Schütz, A., Held, M. J., ... & Cuero-Acosta, Y. A. (2021). Satisfaction with life among university students from nine countries: Cross-national study during the first wave of COVID-19 pandemic. *BMC Public Health*, *21*(1), 2262. https://doi.org/10.1186/s12889-021-12288-1

Sæther, S. M. M., Knapstad, M., Askeland, K. G., & Skogen, J. C. (2019). Alcohol consumption, life satisfaction and mental health among Norwegian college and university students. *Addictive Behaviors Reports*, *10*, 100216. https://doi.org/10.1016/j.abrep.2019.100216

Sahu, P. (2020). Closure of universities due to coronavirus disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. *Cureus*, *12*(4). e7541. https://doi.org/10.7759/cureus.7541

Salimi, N., Gere, B., Talley, W., & Irioogbe, B. (2023). College students mental health challenges: Concerns and considerations in the COVID-19 pandemic. *Journal of College Student Psychotherapy*, *37*(1), 39-51. https://doi.org/10.1080/87568225.2021.1890298

Schunk, F., Trommsdorff, G., Wong, N., & Nakao, G. (2021). Associations between emotion regulation and life satisfaction among university students from Germany, Hong Kong, and Japan: The mediating role of social support. *Frontiers in Psychology*, *12*, 745888. https://doi.org/10.3389/fpsyg.2021.745888

Seligman, M. E. (2008). Positive health. *Applied Psychology*, *57*, 3-18. https://doi.org/10.1111/j.1464-0597.2008.00351.x

Smith, M. B., & Hobbs, N. (1966). The community and the community mental health center. *American Psychologist, 21*(6), 499–509. https://doi.org/10.1037/h0023600

Szkody, E., & McKinney, C. (2019). Stress-buffering effects of social support on depressive problems: Perceived vs. received support and moderation by parental depression. *Journal of Child and Family Studies*, *28*, 2209-2219. https://doi.org/10.1007/s10826-019-01437-1

Şahin, N. H. & Durak, A. (2002). Kısa Semptom Envanteri (Brief Symptom Inventory-BSI): Türk gençleri için uyarlanması. *Türk Psikoloji Dergisi*, *9*(31), 44-56.

Talwar, P., Kumaraswamy, N., & AR, M. F. (2013). Perceived social support, stress and gender differences among university students: A cross sectional study. *Malaysian Journal of Psychiatry*, *22*(2), 42-49.

Tay, L., & Diener, E. (2011). Needs and subjective well-being around the world. *Journal of Personality and Social Psychology, 101*(2), 354–365. https://doi.org/10.1037/a0023779

Turner, R. J., Frankel, B. G., & Levin, D. M. (1983). Social support: Conceptualization, measurement, and implications for mental health. *Research in Community & Mental Health, 3,* 67–111.

Uysal, R., Satici, S. A., Satici, B., & Akin, A. (2014). Subjective vitality as mediator and moderator of the relationship between life satisfaction and subjective happiness. *Educational Sciences: Theory and Practice*, *14*(2), 489-497.

Watson, R., Gardiner, E., Hogston, R., Gibson, H., Stimpson, A., Wrate, R., & Deary, I. (2009). A longitudinal study of stress and psychological distress in nurses and nursing students. *Journal of Clinical Nursing*, *18*(2), 270-278. https://doi.org/10.1111/j.1365-2702.2008.02555.x

Wörfel, F., Gusy, B., Lohmann, K., Töpritz, K., & Kleiber, D. (2016). Mental health problems among university students and the impact of structural conditions. *Journal of Public Health*, *24*, 125-133. https://doi.org/10.1007/s10389-015-0703-6

Yalçın, İ. (2011). Social support and optimism as predictors of life satisfaction of college students. *International Journal for the Advancement of Counselling*, *33*, 79-87. https://doi.org/10.1007/s10447-011-9113-9

Zhou, M., & Lin, W. (2016). Adaptability and life satisfaction: The moderating role of social support. *Frontiers in Psychology, 7,* 1134. https://doi.org/10.3389/fpsyg.2016.01134

Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., & Berkoff, K. A. (1990). Psychometric characteristics of the multidimensional scale of perceived social support. *Journal of Personality Assessment*, *55*(3-4), 610-617. https://doi.org/10.1080/00223891.1990.9674095

Mothers' Punishment Styles for Their Children: A Qualitative Study

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Abstract

The aim of the present study is to analyze the punishment styles used by mothers in the process of teaching behaviors to their children. To accomplish this objective, data were collected from 26 mothers with at least one child aged between 3 and 11 years, utilizing a semi-structured interview format. The gathered data underwent content analysis. The analysis revealed that mothers used two distinct punishment styles: Verbal/Physical Violence and Verbal/Physical Restraint. Verbal/Physical Restraint includes maternal behaviors such as restricting children's access to something they like or want, not talking to them at all or talking less, sending them to a different place and making them stay there for a while, and ignoring them audio-visually for a while. Verbal/Physical Violence includes maternal behaviors such as rebuking, threatening, beating, getting angry, raising her voice, yelling, and speaking harshly to children. The results of the study were discussed within the framework of the literature and recommendations were made.

Keywords: Mother, discipline, punishment, punishment style

Introduction

Parent-child interactions during early development exert a profound influence on a child's future relationships, mental well-being, and self-perception, a premise extensively explored within numerous theoretical frameworks and extensive empirical research. Notably, attachment theory, schema theory, and object relations theory have collectively contributed to our understanding of this phenomenon. A substantial body of research underscores the pivotal role of early maternal (or caregiver) interactions in shaping a child's trajectory. Attachment theorists contend that the parent-child relationship bears enduring implications for a child's capacity to forge future interpersonal bonds. As Bowlby (1973) articulated, "An undesired child not only experiences rejection from their parental figures but also internalizes a sense of unworthiness in the eyes of others." Conversely, a child who receives abundant affection tends to grow up not only feeling secure in their parents' love but also harboring the belief that they are inherently lovable. Consequently, our initial encounters with caregivers serve as the cornerstone upon which we construct our future relationship templates. Similarly, object relations theorists posit that children form unconscious representations of significant figures within their environment, with the primary caregiver holding a pivotal role in this process. These internalized parental images transcend mere substitutes for physical presence, profoundly shaping how children perceive and interact with others in subsequent relationships. In essence, the quality of attachment a child forms with their parents significantly influences their capacity to cultivate meaningful relationships with important individuals later in life (Burger, 2019). Additionally, schema theory postulates that adverse childhood experiences during parent-child interactions give rise to early maladaptive schemas. Typically originating within the nuclear family unit, these schemas exert a potent influence on an individual's behavior in adulthood. Adults often perceive their schemas as veritable truths, consequently guiding their interpretation of subsequent life events. This, in turn, impacts an individual's thoughts, emotions, actions, and interpersonal dynamics, often leading them to inadvertently replicate the detrimental conditions experienced during their formative years (Young et al., 2003).

Empirical studies consistently affirm the theoretical propositions concerning the profound impact of parent/caregiver-child interactions on various facets of a child's development. Research has unveiled a multifaceted relationship between the quality of this interaction and several key domains, including personality (Brand et al., 2009), emotional intelligence (Alegre, 2011), psychopathology (Kopala-Sibley et al., 2017), peer

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relationships (Deković & Meeus, 1997), and engagement in risky behaviors (Liu, 2020). Notably, the presence of positive parent/caregiver-child interaction serves as a protective factor against adverse outcomes, encompassing issues like suicide (Donath et al., 2014) and substance use (O'Byrne et al., 2002). Consequently, the parent/caregiver-child relationship emerges as a pivotal predictor, with the potential to yield both advantageous and disadvantageous consequences for the child's future well-being.

According to Bowlby, an infant needs a warm and loving mother early in life, and the mother is an important attachment figure for the infant. The presence of a nurturing mother figure, or a suitable substitute, is crucial for the emotional development of an infant, and even small separations at a young age can potentially hinder this development (van der Horst & van der Veer, 2010). The quality of interaction between a mother and child has a significant impact on the child's development in many ways. According to widely accepted research, mothers who have accepting and democratic attitudes tend to have a positive influence on their children, while mothers who are authoritarian and rely heavily on punishment tend to have a negative impact on their children (Baumrind, 1966, Darling & Steinberg, 1993; Lamborn et al., 1991; Larzelere & Kuhn, 2005). Punishment, in particular, has attracted significant attention as one of the maternal behaviors that negatively affect children (Gershoff, 2002a).

Punitive behaviors administered by parents are regarded as a means of disciplining children across many cultures (Gershoff et al., 2010). However, such punitive actions can also lead to child abuse (Zolotor et al., 2011). Punishment is defined as the application of a negative stimulus to diminish or eradicate a specific behavior. There is near consensus on two primary categories of punishment: verbal and corporal punishment (Abolfotouh et al., 2009; Straus & Mathur, 1996). Various parental behaviors are encompassed within the domain of corporal punishment. Abolfotouh et al. (2009) delineate physical and severe corporal punishment behaviors as follows: Spanking the buttocks with hands, striking the child's buttocks with an object, slapping the face or head, pulling hair, shaking, pinching, twisting ears, and coercing the child to adopt an uncomfortable position are all classified as forms of moderate physical punishment. In contrast, actions such as striking the child with an object on areas other than the buttocks, kicking, burning, beating, threatening with a knife or gun, and choking are all considered severe physical punishment. Additionally, verbal punishment behaviors frequently employed by parents encompass expressions of anger, shouting, yelling, insulting, swearing, and issuing threats (Evans et al., 2012). It is important to note that physical punishment is linked to physical abuse, whereas verbal punishment is associated with emotional abuse.

Parental punishment behaviors are widespread worldwide. For instance, a study revealed that over 90% of toddlers have encountered spanking or other forms of corporal punishment (Straus & Kaufman Kantor, 1994). Another study indicated that slightly more than a third of parents admitted to using physical discipline with their infants (under 1 year old), while 94% reported employing such methods with toddlers aged 3 to 5 (Straus & Stewart, 1999). In a Turkish study, it was observed that all participating mothers resorted to various forms of punishment, with physical punishment being the predominant method employed (Buldukoglu & Kukulu, 2008). Buldukoglu and Kukulu (2008) further noted that, from a traditional Turkish perspective, many parents consider corporal punishment a legitimate and effective means of discipline. Indeed, corporal punishment is often perceived as socially acceptable and normative within Turkish parenting practices. Virtually all children in Turkey experience parental punishment at some point in their lives. An investigation into child punishment by parents across six European countries (Bulgaria, Germany, Lithuania, The Netherlands, Romania, and Turkey) revealed that corporal punishment is most prevalent in Turkey and Lithuania. Notably, these two countries still legally permit the use of corporal punishment unlike the other countries in the study (Durivage et al., 2015).

The act of disciplining children through punishment can potentially result in numerous adverse outcomes for the child. In a meta-analysis study that scrutinized the associations between parental corporal punishment and various aspects of child behaviors and experiences, the following findings emerged: Parental corporal punishment exhibited correlations with multiple dimensions of child development, encompassing heightened immediate compliance and aggression, alongside diminished levels of moral internalization and mental well-being (Gershoff, 2002b). The collective body of research suggests that parental punishment is linked to elevated levels of antisocial conduct (Lansford et al., 2011), psychological challenges (Afifi et al., 2012), and aggressive behavior (Taylor et al., 2010) within the child and adolescent populations.

The cultural acceptance of parental punishment as a norm in Turkey contributes to an increased prevalence of children experiencing punitive actions. Nonetheless, these disciplinary behaviors exert a detrimental impact on children in various dimensions. This study endeavors to elucidate the styles of punishment employed by Turkish mothers, thereby offering a comprehensive exploration of behaviors that, while considered customary, may indeed be characterized as "abusive."

Method

Model of the Study

This study investigates the disciplinary approaches employed by mothers in the upbringing of their children, employing a qualitative methodology. Specifically, the research was conducted utilizing a phenomenological design. The investigators gathered and subsequently analyzed qualitative data by means of a semi-structured interview questionnaire that they devised for this purpose.

Participants

This study encompassed 26 mothers, each having at least one child within the age range of 3 to 11, who met the inclusion criteria of being literate and employing punitive measures as a form of discipline. A convenience sampling method was employed to select participants. Descriptive statistics pertaining to the mothers are detailed in Table 1.

Tablo 1. Descriptive statistics of participants

Variable		n	%
Age	It varies between 27 and 41. ($\overline{X}_{year}$= 29.33).		
Number of children	1 ile 3 arasında değişmektedir ($\overline{X}_{children}$= 2.2).		
	Low	1	.04
Perceived socio-economic level	Middle	22	.84
	High	2	.08
	Very high	1	.04
	Total	26	100
	Primary school graduate	5	.19
	Middle school graduate	6	.23
Mother's education level	High school graduate	8	.31
	University graduate	7	.27
	Total	26	100
Spouse's education level	Primary school graduate	2	.08
	Middle school graduate	5	.19
	High school graduate	8	.31
	University graduate	11	.42
	Total	26	100

As depicted in Table 1, the mothers exhibited an average age of 29.33 years, with an average number of 2.2 children per mother. A significant majority of the mothers (84%) self-assessed their socioeconomic status as middle-class. Furthermore, it was noted that mothers and their husbands possessed varying levels of educational attainment.

Instrument and Process

In this study, a data collection instrument in the form of a semi-structured interview questionnaire, devised by the researchers, was employed. The semi-structured interview questionnaire comprises two distinct sections. The initial section encompasses inquiries related to participants' age, number of children, self-perceived socioeconomic status, educational attainment, and the educational background of their spouses. Meanwhile, the second section comprises a single query concerning the punitive styles employed by mothers during the process of teaching behaviors to their children.

The solitary query within the semi-structured interview questionnaire was augmented by the inclusion of probing questions aimed at gathering more comprehensive data. The primary objective of employing probing questions is to elicit more detailed insights and information. Probing questions, as delineated by Kvale (1994), serve as a means for the researcher to delve deeper into the subject matter.

In the development of the semi-structured interview questions, an extensive literature review was conducted encompassing the disciplinary methods employed by mothers in shaping their children's behavior and the principles of phenomenological research. Subsequently, a semi-structured questionnaire comprising a single query pertaining to mothers' approaches to disciplining their children was formulated. This questionnaire

underwent a review process by three experts, including one professor and two associate professors, who specialize in academic research concerning mother-child interactions. Their insights were solicited to assess the questionnaire's adequacy. Ultimately, it was determined that the single question, "What kinds of punishments do you employ in the process of teaching behavior to your child?" provided a satisfactory level of coverage. Data collection was executed using this questionnaire, with the researchers actively participating in the data-gathering process. Initially, mutually convenient dates and times were established with each participant. Written responses were obtained from all participants, and the interview sessions were observed to typically span 10 to 15 minutes in duration. The data collection process took place in the year 2023.

Following the completion of the interviews, all data were transcribed and subjected to analysis. Initially, a comprehensive reading of all interviews was conducted twice, followed by the coding of interview notes. Subsequently, related codes were aggregated to establish sub-themes. The analytical approach employed in this study was content analysis, which aims to elucidate concepts and relationships capable of elucidating the gathered data. In content analysis, data undergo a process of conceptualization, organization of concepts, and eventual thematic identification. Essentially, content analysis serves the purpose of defining the data and unveiling the inherent truths concealed within (Yıldırım & Şimşek, 2013). In this study, an inductive analysis method was utilized within the framework of content analysis. Inductive analysis serves to unearth the underlying concepts and interconnections between these concepts through the coding process, effectively constituting a form of theorization. In this methodology, themes are derived from codes (Strauss & Corbin, 1990; Yıldırım & Şimşek, 2013). The initial stage of content analysis entails coding the data, which involves assigning labels to segments of the data. In this study, the coding approach of "coding based on concepts derived from the data" was adopted. This coding method strives to analyze the data from an inductive standpoint (Yıldırım & Şimşek, 2013). Qualitative data analysis was facilitated using the MAXQDA Package Program.

Results

Codes and sub-themes were determined based on the data obtained through a semi-structured interview form based on phenomenological research. While presenting the findings, the participants were coded as M(Mother)1, M2, M3.... In this study, two sub-themes were determined as the mothers' punishing style of their children. These sub-themes were named Verbal/Physical Violence and Verbal/Physical Restraint. First, the results for the Verbal/Physical Violence sub-theme and then the findings for the Verbal/Physical Restraint sub-theme were presented. The sub-themes related to mothers' punishing styles of their children are presented in Figure 1 and the codes of the sub-themes are presented in Table 2 with their frequencies.
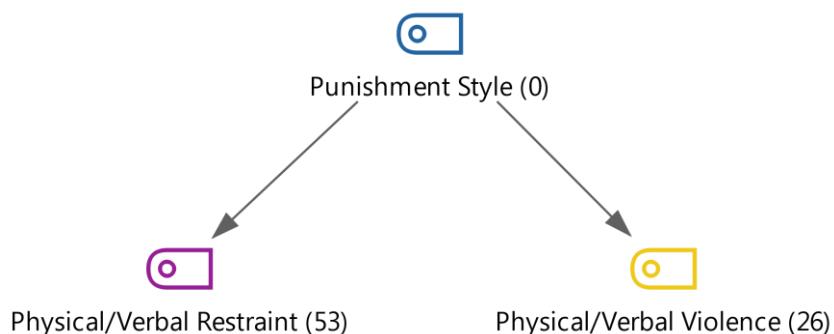
Figure 1. Sub-themes for mothers' punishment styles

Tablo 2. Sub-themes and codes related to mothers' punishment styles

Physical/Verbal Restraint		53
	Banning something he/she likes or wants	24
	To be offended/not to speak	13
	Staying away physically	8
	Ignoring	8
Physical/Verbal Violence		26
	Rebuke	7
	Threaten	6
	Raise voice/yell	4
	Angry	4

Beat	2
Speak harshly	2
Grouch	1

As seen in Table 1, mothers use Verbal/Physical Restraint and Verbal/Physical Violence styles when punishing their children, respectively. The codes that make up the Verbal/Physical Restraint sub-theme are restricting children's access to something they like or want, not talking to them at all or talking less, sending them to a different place and making them stay there for a while, and ignoring them audio-visually for a while. The codes of the Verbal/Physical Restraint sub-theme are presented in Figure 2.
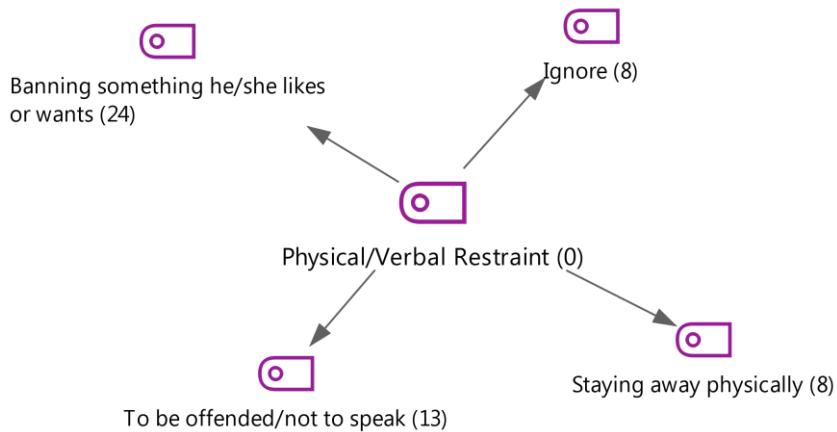
Figure 2. Codes for Verbal/Physical Restraint sub-theme

Some participant views on the sub-theme of Verbal/Physical Restriction are presented below.

I restrict her from playing with toys for a while (M26): Code for banning something he/she likes or wants

I deprive her of something she wants (M24): Code for banning something he/she likes or wants

I do not answer his questions for a while (M16): Code for ignore

If I am very angry, I ignore him/her (around 20 minutes) (M14): Code for ignore

I punish him/her by not talking to him/her, by resenting him/her (M25): Code for to be offended/not to speak

My punishment is not talking to them (M1): Code for to be offended/not to speak

I lock him in the room sometimes (M20): Code for staying away physically

I send him to his room; I don't let him leave the room until he realizes his mistake and apologizes (M18): Code for staying away physically

When the participant views on the Verbal/Physical Restraint sub-theme are examined, it is seen that mothers exhibit behaviors such as restricting their children's access to something they like or want, not talking to them at all or talking less, sending them to a different place and making them stay there for a while, and ignoring them audio-visually for a while in order to punish them. When these views are evaluated as a whole, it can be said that the title Verbal/Physical Restraint is appropriate for these views.

The codes that make up the Verbal/Physical Violence sub-theme are rebuking, threatening, raising voice/yelling, getting angry, beating, speaking harshly, and grouching, respectively. The codes of the Verbal/Physical Violence sub-theme are presented in Figure 3.
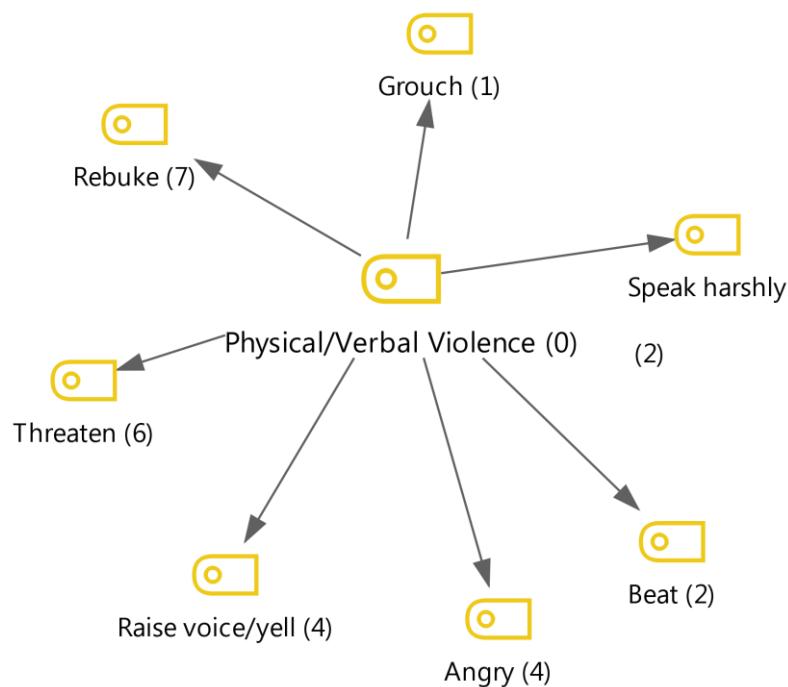
Figure 3. Codes for Verbal/Physical Violence sub-theme

Some participant views on the sub-theme of verbal/physical violence are presented below.

I rebuke him when he does something very bad (M23): Code for rebuke

I say threatening words like "Look, I won't send him there, I won't give him away" (M21): code for threatening

I raise my voice and talk about behaviors I do not like (M9): Code for raising voice/yelling

When I shout, they disappear (M4): Code for raising voice/yelling

I usually speak harshly (M5): Code for speaking harshly

I reproach them (M13): Code of grouch

I use physical violence (M15): Code for beating

I get angry when they misbehave (M17): Code for angry

When the participant views the sub-theme of Verbal/Physical Violence is examined, it is seen that mothers exhibit the behaviors of rebuking, threatening, beating, getting angry, raising their voices, yelling, and speaking harshly to their children in order to punish them. When these views are evaluated as a whole, it can be said that the title Verbal/Physical Violence is appropriate for these views.

Finally, a word cloud of the punishment styles used by mothers towards their children was created. The word cloud is presented in Figure 4.

Figure 4. Word cloud for mothers' punishment styles

When the word cloud is examined, it is seen that the most prominent punishment behaviors are banning something he/she likes or wants, being offended/not speaking, staying away physically, ignoring, and rebuking.

Discussion and Recommendations

In the present study, it was found that mothers used two different styles of punishment: Verbal/Physical Violence and Verbal/Physical Restraint. Verbal/Physical Restraint includes maternal behaviors such as restricting children's access to something they like or want, not talking to them at all or talking less, sending them to a different place and making them stay there for a while, and ignoring them audio-visually for a while. Verbal/Physical Violence includes maternal behaviors such as rebuking, threatening, beating, getting angry, raising her voice, yelling, and speaking harshly to children.

Atli et al. (2018) conducted a comprehensive examination of parental disciplinary styles and motivations, revealing that parents employ punitive measures in response to various behaviors exhibited by their children. These behaviors encompass academic issues, notably low school performance, social transgressions such as disrespect towards elders, arriving home late, and dishonesty, excessive and problematic use of technology (e.g., prolonged engagement with phones, computers, tablets), and neglect of self-care tasks, including disorganization of clothing. Parents utilize an array of punitive techniques to address their children's negative behaviors, encompassing financial measures like withholding allowances and refraining from purchasing toys, activity-based restrictions such as prohibiting outings or television viewing, physical actions including slapping, verbal expressions of displeasure such as anger and yelling, as well as emotional responses like depriving the child of affection. These findings bear a resemblance to the outcomes of our study. In a separate investigation conducted by Atli et al. (2020), it was determined that parents employed disciplinary methods involving response cost, verbal and emotional reprimands, and corporal punishment. Similarly, Buz and Ülküer (1988) identified parents' employment of facial expressions, verbal admonitions, and physical violence as means of punishment. Additionally, Kutlu et al. (2007) delved into the methods employed by mothers in punishing their children, uncovering a range of disciplinary actions such as shouting loudly, confinement within rooms, physical chastisement, reduction of allowances, restrictions on socializing with friends, silent treatment, refusal to purchase desired items, and confinement within bathroom and toilet spaces. The disciplinary approaches adopted by parents in Turkey align closely with the findings of our study.

Similar to Turkey, parents around the world employ punitive measures to discipline their children. For instance, in a study conducted by Straus and Stewart (1999), it was revealed that approximately 94% of American children aged 3 and 4 had experienced at least one instance of parental spanking within the previous year. A recent comprehensive investigation aimed to provide a global perspective on corporal punishment, specifically examining its variations between mothers and fathers in the context of daughters and sons across nine different countries. This research involved interviews with 1,398 mothers, 1,146 fathers, and 1,417 children aged 7 to 10 in China, Colombia, Italy, Jordan, Kenya, the Philippines, Sweden, Thailand, and the United States. The study's findings indicated that within the surveyed population, approximately 54% of girls and 58% of boys had encountered mild forms of corporal punishment. Furthermore, 13% of girls and 14% of boys had experienced severe corporal punishment within the past month, administered by their parents or other household members. Additionally, 17% of parents believed that the application of corporal punishment was essential for effectively raising their children. Notably, boys experienced corporal punishment more frequently than girls, and mothers tended to employ corporal punishment more frequently than fathers. The research also unveiled significant disparities among countries, with Sweden reporting the lowest incidence of corporal punishment and Kenya the

highest (Lansford et al., 2010). It is crucial to acknowledge that physical punishment can be associated with child abuse. A decade-long study analyzing emergency room visits in the United States discovered that over 10% of blunt trauma injuries sustained by young children were attributed to abuse (DiScala et al., 2000). This underscores the potential connection between physical punishment and the occurrence of child abuse.

Strengths, Limitations, and Future Research

This study employs a qualitative research approach to investigate the methods employed by mothers in disciplining their children. While qualitative research, by its very nature, has inherent limitations in terms of generalizability, it offers the advantage of yielding in-depth insights. Specifically, this study delves into the various disciplinary techniques adopted by mothers. Future research endeavors could explore additional dimensions of this topic, including the underlying motivations driving mothers to discipline their children, the consequences stemming from specific punishment styles, and the potential correlations between these styles and the mental well-being of children. Furthermore, it is worth noting that there is currently no established scale in the Turkish context that assesses parents' disciplinary styles with regard to their children. The insights garnered from this study could serve as a foundation for the development of such a scale. Finally, it is recommended that future research endeavors employ quantitative methodologies characterized by a higher degree of generalizability to investigate the disciplinary approaches employed by mothers in relation to their children.

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Authors declare that they have no conflict of interest.

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Ethical permission was obtained from Dokuz Eylul UniverstySocial for this research.

References

Abolfotouh, M. A., El-Bourgy, M. D., Seif El Din, A. G., & Mehanna, A. A. (2009). Corporal punishment: Mother's disciplinary behavior and child's psychological profile in Alexandria, Egypt. *Journal of Forensic Nursing, 5*(1), 5-17. https://doi.org/10.1111/j.1939-3938.2009.01025.x

Afifi, T. O., Mota, N. P., Dasiewicz, P., MacMillan, H. L., & Sareen, J. (2012). Physical punishment and mental disorders: Results from a nationally representative US sample. *Pediatrics, 130*(2), 184–192. https://doi.org/10.1542/peds.2011-2947

Alegre, A. (2010). Parenting Styles and Children's Emotional Intelligence: What do We Know? *The Family Journal, 19*(1), 56–62. https://doi.org/10.1177/1066480710387486

Atli, A., Şad, S. N., & Özer, N. (2018). Anne-babaların ödüllendirme ve cezalandırma nedenleri, yöntemleri ve çocukları üzerindeki etkileri. II. Uluslararası Multidispliner Kongresi, 18, Adana, Turkey.

Atli, A., Şad, S. N., & Özer, N. (2022). A mixed methods approach to developing a scale on parents' practices to reward and punish their children. *Istraživanja u pedagogiji, 12*(2), 339-357. https://doi.org/10.5937/istrped2202339a

Baumrind, D. (1966). Effects of authoritative parental control on child behavior. *Child Development, 37*(4), 887-907. https://doi.org/10.2307/1126611

Bowlby, J. (1973). *Attachment and loss: Separation: Anger and anxiety (Vol. 2)*. Basic Books.

Brand, S., Hatzinger, M., Beck, J., & Holsboer-Trachsler, E. (2009). Perceived parenting styles, personality traits and sleep patterns in adolescents. *Journal of Adolescence, 32*(5), 1189–1207. Portico. https://doi.org/10.1016/j.adolescence.2009.01.010

Buldukoglu, K., & Kukulu, K. (2008). Maternal punishment practices in a rural area of Turkey. *Child: Care, Health and Development, 34*(2), 180–184. https://doi.org/10.1111/j.1365-2214.2007.00780.x.

Burger, J. M. (2019). *Personality*. (Tenth ed.). Cengage Learning, Inc.

Buz, S., & Ülküer, N. S. (1988). 5-6 yaş arasındaki çocukların ana-babalarının ödüllendirme ve cezalandırma yöntemleri. *Eğitim ve Bilim, 12*(69), 56-62.

Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin, 113*(3), 487–496. https://doi.org/10.1037/0033-2909.113.3.487

Deković, M., & Meeus, W. (1997). Peer relations in adolescence: Effects of parenting and adolescents' self-concept. *Journal of Adolescence, 20*(2), 163-176. https://doi.org/10.1006/jado.1996.0074

DiScala, C., Sege, R., Li, G., & Reece, R. M. (2000). Child abuse and unintentional injuries: A 10-year retrospective. *Archives of Pediatrics & Adolescent Medicine, 154*(1), 16-22.

Donath, C., Graessel, E., Baier, D., Bleich, S., & Hillemacher, T. (2014). Is parenting style a predictor of suicide attempts in a representative sample of adolescents?. *BMC Pediatrics, 14*(1), 1-13. https://doi.org/10.1186/1471-2431-14-113

Durivage, N., Keyes, K., Leray, E., Pez, O., Bitfoi, A., Koç, C., ... & Kovess-Masfety, V. (2015). Parental use of corporal punishment in Europe: Intersection between public health and policy. *PloS One, 10*(2), e0118059. https://doi.org/10.1371/journal.pone.0118059

Evans, S. Z., Simons, L. G., & Simons, R. L. (2012). The effect of corporal punishment and verbal abuse on delinquency: Mediating mechanisms. *Journal of Youth and Adolescence, 41*(8), 1095–1110. https://doi.org/10.1007/s10964-012-9755-x.

Gershoff, E. T. (2002a). Corporal punishment, physical abuse, and the burden of proof: Reply to Baumrind, Larzelere, and Cowan (2002), Holden (2002), and Parke (2002). *Psychological Bulletin, 128*(4), 602–611. https://doi.org/10.1037/0033-2909.128.4.602

Gershoff, E. T. (2002b). Corporal punishment by parents and associated child behaviors and experiences: A meta-analytic and theoretical review. *Psychological Bulletin, 128*(4), 539–579. https://doi.org/10.1037/0033-2909.128.4.539

Gershoff, E. T., Grogan-Kaylor, A., Lansford, J. E., Chang, L., Zelli, A., Deater-Deckard, K., & Dodge, K. A. (2010). Parent discipline practices in an international sample: Associations with child behaviors and moderation by perceived normativeness. *Child Development, 81*(2), 487-502. https://doi.org/10.1111/j.1467-8624.2009.01409.x

Grogan-Kaylor, A. (2005). Corporal punishment and the growth trajectory of children's antisocial behavior. *Child Maltreatment, 10*(3), 283–292. https://doi.org/10.1177/1077559505277803

Kopala-Sibley, D. C., Jelinek, C., Kessel, E. M., Frost, A., Allmann, A. E., & Klein, D. N. (2017). Parental depressive history, parenting styles, and child psychopathology over 6 years: The contribution of each parent's depressive history to the other's parenting styles. *Development and Psychopathology, 29*(4), 1469-1482. https://doi.org/10.1017/s0954579417000396

Kutlu, L., Batmaz, M., Bozkurt, G., Genctürk, N., & Gül, A. (2007). The relation between punishment methods applied to mothers in their own childhood and punishment methods applying to their children. *Anadolu Psikiyatri Dergisi, 8,* 22-29.

Kvale, S. (1994). *Interviews: An introduction to qualitative research interviewing*. Sage Publications, Inc.

Lamborn, S. D., Mounts, N. S., Steinberg, L., & Dornbusch, S. M. (1991). Patterns of Competence and Adjustment among Adolescents from Authoritative, Authoritarian, Indulgent, and Neglectful Families. *Child Development, 62*(5), 1049–1065. https://doi.org/10.1111/j.1467-8624.1991.tb01588.x

Lansford, J. E., Alampay, L. P., Al-Hassan, S., Bacchini, D., Bombi, A. S., Bornstein, M. H., Chang, L., Deater-Deckard, K., Di Giunta, L., Dodge, K. A., Oburu, P., Pastorelli, C., Runyan, D. K., Skinner, A. T., Sorbring, E., Tapanya, S., Tirado, L. M. U., & Zelli, A. (2010). Corporal Punishment of Children in Nine Countries as a Function of Child Gender and Parent Gender. *International Journal of Pediatrics, 2010,* 1–12. https://doi.org/10.1155/2010/672780

Lansford, J. E., Criss, M. M., Laird, R. D., Shaw, D. S., Pettit, G. S., Bates, J. E., et al. (2011). Reciprocal relations between parents' physical discipline and children's externalizing behavior during middle childhood and adolescence. *Development and Psychopathology, 23,* 225–238. https://doi.org/10.1017/s0954579410000751

Larzelere, R. E., & Kuhn, B. R. (2005). Comparing child outcomes of physical punishment and alternative disciplinary tactics: A meta-analysis. *Clinical Child and Family Psychology Review, 8,* 1-37. https://doi.org/10.1007/s10567-005-2340-z

Liu, X. (2019). Parenting styles and health risk behavior of left-behind children: The mediating effect of cognitive emotion regulation. *Journal of Child and Family Studies, 29*(3), 676–685. https://doi.org/10.1007/s10826-019-01614-2

O'Byrne, K. K., Haddock, C. K., Poston, W. S., & Institute, M. A. H. (2002). Parenting style and adolescent smoking. *Journal of Adolescent Health, 30*(6), 418-425. https://doi.org/10.1016/s1054-139x(02)00370-1

Straus, M. & Mathur, A. (1996). Social change and the trends in approval of corporal punishment by parents from 1968 to 1994. In D. Frehsee, W. Horn & K. Bussmann (Ed.), *Family violence against children: A*

challenge for society (pp. 91-106). Berlin, New York: De Gruyter. https://doi.org/10.1515/9783110828030.91

Straus, M. A., & Kantor, G. K. (1994). Corporal punishment of adolescents by parents: A risk factor in the epidemiology of depression, suicide, alcohol abuse, child abuse, and wife beating. *Adolescence, 29*(115), 543–561.

Straus, M. A., & Stewart, J. H. (1999). Corporal punishment by American parents: National data on prevalence, chronicity, severity, and duration, in relation to child and family characteristics. *Clinical Child and Family Psychology Review, 2*(2), 55–70. https://doi.org/10.1023/a:1021891529770

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research*. Sage publications.

Taylor, C. A., Manganello, J. A., Lee, S. J., & Rice, J. C. (2010). Mothers' spanking of 3-year-old children and subsequent risk of children's aggressive behavior. *Pediatrics, 125*(5), e1057-e1065. https://doi.org/10.1542/peds.2009-2678

van der Horst, F. C. P., & van der Veer, R. (2010). The ontogeny of an idea: John Bowlby and contemporaries on mother–child separation. *History of Psychology, 13*(1), 25–45. https://doi.org/10.1037/a0017660.

Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri*. (9. Genişletilmiş Baskı). Seçkin Yayınevi.

Young, J. E., Klosko, J. S., ve Weishaar, M. E. (2003). *Schema therapy: A practitioner's guide*. The Guilford Press.

Zolotor, A. J., Theodore, A. D., Runyan, D. K., Chang, J. J., & Laskey, A. L. (2011). Corporal punishment and physical abuse: population-based trends for three-to-11-year-old children in the United States. *Child Abuse Review, 20*(1), 57-66. https://doi.org/10.1002/car.1128.

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Bibliometric Analysis of Sustainable Leadership Using Visual Mapping Technique

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Bibliometric Analysis of Sustainable Leadership Using the Visual Mapping Technique

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Abstract

Sustainable leadership is a necessity to achieve the goals of sustainable development, such as addressing complex global issues, preserving environmental and social balance, ensuring the well-being of future generations, and promoting innovation. Sustainable leadership in education is important to contribute to sustainable development goals by equipping future generations with environmental, social, and economic responsibilities and integrating sustainability principles into the education system. This study aims to determine the current state of research containing the term "sustainable leadership" by conducting a bibliometric analysis using the Web of Science (WoS) database. The VOSviewer software is employed to visually represent the data obtained from the WoS database. According to the comprehensive bibliometric analysis results, research related to the theme of "sustainable leadership" began to emerge in 2002, with a total of 390 publications identified in the period from 2002 to 2023. The majority of these publications are in the form of articles, reflecting the interest and curiosity within academic circles in this field. However, considering the lower presence of other document types such as conference papers, book chapters, and review articles, there appears to be a growing need for these types of sources. The bibliometric analysis reveals that research on sustainable leadership is predominantly published in the form of articles, with a significant increase observed, particularly in publications from 2019. The VOSviewer analysis of the "sustainable leadership" field categorizes the most commonly used terms into three clusters: "sustainability", "sustainable leadership", and "leadership". In terms of the distribution of articles in the field of sustainable leadership by citing countries, the countries with the highest number of citations are Thailand, South Africa, the United States, and China, respectively. The findings of the analysis are believed to contribute as a resource for future research and benefit researchers in exploring potential topics related to the theme of sustainable leadership in the near future. Additionally, it is noted that there is limited research on sustainable leadership in Turkey, and recommendations are provided for its further development.

Keywords: Sustainable leadership, Sustainability, Leadership, Bibliometric analysis, VOSviewer

Introduction

In an era characterized by unprecedented global challenges, such as climate change, resource depletion, and societal disparities, the notion of sustainability has emerged as a foundational doctrine. It guides not only organizations but also communities and individuals in their actions (Rockström et al., 2009). This critical juncture necessitates individuals possessing profound insights into the intricate interplay among ecological, social, and economic dynamics. These individuals, commonly referred to as sustainable leaders, assume a central role in instigating transformative changes directed toward harmonizing current imperatives with the expectations of forthcoming generations (Liao, 2022).

Sustainable leadership transcends the confines of traditional managerial competencies, embodying a paradigm that encompasses the capacity to embrace the comprehensive well-being of ecosystems and societies, surpassing immediate gains (Kantabutra, 2012). Sustainable leaders are tasked with responsibilities that span beyond strategic planning, encompassing the cultivation of ethical values, stakeholder engagement, and the promotion of innovative initiatives conducive to positive change (Hallinger and Suriyankietkaew, 2018). Sustainable leadership represents an approach geared towards steering organizations to operate with consideration for both short-term objectives and enduring sustainability goals (Avery and Bergsteiner, 2011). Its significance extends

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beyond the economic realm, encompassing environmental, social, and societal domains. Sustainable leadership endeavors to strike a balance between environmental, social, and economic responsibilities while taking into account the needs of future generations (Bansal, 2005). Educational organizations, being open systems, are subject to the influence of shifting environmental and societal conditions. Furthermore, instances of sustainable leadership can serve as a source of inspiration for students, faculty, and other stakeholders, encouraging the display of positive behaviors and values (Hargreaves and Fink, 2004). Additionally, it can equip organizations with the ability to adapt to future challenges, foster innovation, and bolster employee commitment (Çayak, 2021). Furthermore, the sustainable leadership approach can assume a pivotal role in risk management, enhancing organizations' capacity to proactively identify potential issues (Liu and Heizmann, 2018). Consequently, this leadership approach holds the potential to fortify sustainability within an organizational culture and engender a more profound alignment of internal stakeholders with these values. In light of this, the exigency for educational organizations to be led by individuals possessing sustainable leadership acumen becomes increasingly salient, as they must navigate the complex terrain of both environmental and societal shifts.

In the realm of education, sustainable leadership represents a strategic paradigm of growing significance within contemporary educational systems (Hargreaves and Fink, 2004). This pioneering leadership approach extends its purview beyond immediate educational objectives, instead prioritizing the comprehensive development of future generations' capacities and awareness. Sustainable leaders do not merely endeavor to enhance the current accomplishments of educational institutions; they are committed to the cultivation of students as individuals equipped with ethical values, environmental stewardship, and social consciousness. These leaders are catalysts for the cultivation of innovative and sustainable practices across a broad spectrum of domains, ranging from pedagogical methods to institutional governance. Sustainable leaders within educational organizations can be characterized as individuals whose sustainable practices continue to exert a lasting influence, even when they assume leadership roles in different educational institutions. Consequently, despite the frequent turnover of leadership within educational institutions, organizations led by sustainable leaders tend to manifest reduced levels of emotional strain, turnover intentions, and cynicism (Hargreaves & Fink, 2004). In line with these studies, Moreira et al. (2022) have found that sustainable leadership enhances employees' perceptions of organizational support, places value on their competency development, and mitigates their intentions to leave their positions Çayak and Çetin (2018) have demonstrated that the sustainable leadership behaviors of school principals can predict high levels of organizational commitment and job satisfaction among teachers. Dalati et al. (2017) have ascertained that sustainable leadership can enhance employees' levels of organizational trust.

The conceptual framework of sustainable leadership within educational organizations holds considerable interest and significance. It not only pertains to the contribution of the education sector to sustainability but also serves as a guiding force in the evolution of leadership practices (Hallinger and Suriyankietkaew, 2018). In this context, the execution of a bibliometric analysis of sustainable leadership within educational organizations represents a noteworthy research undertaking. Bibliometric analysis offers a systematic and quantitative examination of articles, publication trends, and key authors within academic literature (Van Eck and Waltman, 2020). The conduct of such analysis assumes importance in comprehending the potential contributions of sustainable leadership within educational organizations to both the domains of education and leadership. Moreover, it aids in the identification of prevailing trends within this area of study. Such analyses provide insights into the current state of the literature and its evolutionary trajectory over time and, consequently, point towards avenues for future research. Furthermore, bibliometric analysis can facilitate the elucidation of interdisciplinary collaborations and interaction networks, offering a multidisciplinary perspective on the subject. Bibliometric analysis holds paramount importance within the realm of educational science, offering a systematic and quantitative means to assess scholarly output and trends in this field. Through the analysis of academic publications, citation patterns, and author networks, bibliometrics provides invaluable insights into the dissemination of knowledge, the impact of research, and the identification of seminal works This methodological approach enables researchers and educational policymakers to discern the most influential authors, journals, and research themes, thereby informing decisions regarding resource allocation, curriculum development, and the identification of emerging research directions (Mingers & Leydesdorff, 2015). Moreover, bibliometric analysis serves as a tool for benchmarking the research productivity of educational institutions, facilitating international comparisons, and fostering collaboration among researchers in this multidisciplinary field (Van Eck & Waltman, 2010). Thus, bibliometrics not only enhances the transparency and accountability of educational research but also contributes to its continuous evolution by illuminating the dynamics of knowledge creation and dissemination.

Method

In this research endeavor, the thematic discourse surrounding "sustainable leadership" has been scrutinized within the timeframe spanning from 2002 to 2023. The objective of this investigation has been to delineate prevailing research trends in this domain through the application of bibliometric analysis techniques to the pertinent scholarly literature. The acquired dataset has been subjected to tabulation and visual mapping methods for visualization. Bibliometrics, a methodological tool of significance, serves a multifaceted role in academia. It aids in the identification of authoritative sources in scientific publications, facilitates the assessment of recent developments and alterations in the scholarly landscape, contributes to the establishment of an academic foundation, and permits the evaluation of research outcomes (Visser and Courtice, 2011). Furthermore, it offers a means of objectively evaluating the work of scientists while quantifying scientific quality and productivity (Leal Filho et al., 2020). Within this context, bibliometric analyses assume a prominent position as quantitative methodologies that depict institutions, nations, research institutes, journals, publishers, universities, authors, and the intricate networks of citations and relationships. These analyses provide valuable academic guidance about the subject under examination (Erer et al., 2023).

Contemporary bibliometric analyses can be executed using a variety of databases, complementing traditional methods. Databases such as Web of Science (WoS), Scopus, Google Scholar, PubMed, and MEDLINE are among the most commonly favored sources for conducting bibliometric inquiries (Chen, 2017; Kahraman, 2022). For this study, the WoS database was employed. WoS enjoys recognition as a pioneering academic literature database within the social sciences and encompasses the proceedings of international conferences, symposia, seminars, workshops, and congresses (Martinez et al., 2015). Notably, this database possesses a distinguished impact factor and provides fundamental metadata, including abstracts, references, citation statistics, author affiliations, institutional origins, countries of origin, and journal impact factors (Donthu et al., 2021).

As this study has been designed as a bibliometric analysis, it does not fall under the classification of research requiring ethical approval. Consequently, in the initial stage of the investigation, on May 28, 2023, the search query "sustainable leadership" was employed in the WoS database using the formulation ALL= ("sustainable leadership"). Although adjustments were made to encompass all years within the database, the analysis encompassed scientific publications between the years 2002 and 2023 due to the presence of "sustainable leadership" research within the database since 2002. In the subsequent phase, the VOSviewer software was harnessed to generate visual representations of the acquired dataset. VOSviewer is a recognized software tool employed for creating, visualizing, and exploring network-based maps founded on diverse datasets (Van Eck and Waltman, 2020). In this context, this study first conducted assessments based on data extracted from the WoS database. Subsequently, publications about sustainable leadership underwent analysis utilizing the VOSviewer software, encompassing aspects such as publication types, temporal distribution, research domains, leading countries of activity, text-based mapping, keyword analysis, co-authorship networks, citation patterns, and co-citation patterns. The ensuing findings are expounded upon below.

Results and Discussion

As previously stated, on May 28, 2023, a systematic search was carried out within the Web of Science (WoS) database utilizing the query ALL=("sustainable leadership") to retrieve a comprehensive corpus of 390 scholarly works spanning the publication period from 2002 to 2023. The WoS platform furnishes comprehensive data about the dissemination of retrieved studies categorized by publication year, research domains, prominent authors contributing the highest volume of publications, and the citation indices in which these studies are indexed. The resultant compilation delineates the various publication types obtained through the WoS inquiry, accompanied by the corresponding numerical count for each category, as delineated in Table 1.

Table 1. The types of studies conducted on sustainable leadership

Document Type	Number of studies
Article	234
Proceeding paper	94
Review article	42
Book chapter	28
Book	1
Book review	9

As can be seen in Table 1, there are a total of 234 articles, 94 conference papers, 42 reviews, 28 book chapters, 1 book, and 9 book reviews scanned in WoS related to "sustainable leadership. Figure 1 presents a bar graph

depicting the chronological distribution of studies examined in the Web of Science (WoS) database. Notably, the first study on the subject matter emerged in 2002. This inaugural study, titled "No Easy Answers: Research and Innovation for the Forestry Sector," was conducted by J.D. Wright and subsequently published in the "Forestry Chronicles" journal. Except for the year 2003, every subsequent year featured at least one study addressing the subject matter. Although the number of studies related to the subject was relatively limited until 2010, the period spanning from 2011 to 2018 witnessed a consistent annual surge, with the number of studies surpassing 15. Significantly, in 2019, there was a remarkable upsurge in studies about the subject, culminating in a total of 86 publications within that year.
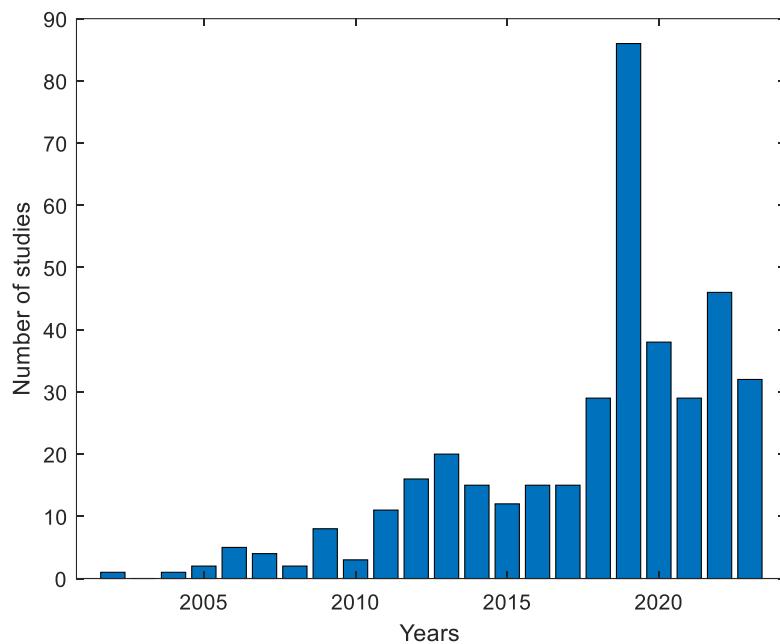
Figure 1. Distribution of studies on sustainable leadership by years

Subsequent years continued to yield a substantial volume of research, with 38, 29, 46, and 32 studies published, respectively. Table 2 complements this analysis by providing insights into the research fields associated with the studies scanned in WoS. The first column of Table 2 delineates the study types, while the second column enumerates the corresponding quantities for each category. It is important to note that Table 2 exclusively features the nine fields where the highest number of studies were conducted.

Table 2. The main research areas of study on sustainable leadership

Research categories	Number of studies
Green Sustainable Science Technologies	140
Management	134
Education Educational Research	130
Environmental Sciences	79
Environmental Studies	73
Business	45
Economics	10
Engineering	10
Multidisciplinary Psychology	12

As indicated in Table 2, the predominant research categories about the subject encompass, in descending order, "Green Sustainable Science and Technologies," "Management," and "Educational Research," accounting for 140, 134, and 130 studies, respectively. Additionally, there are a combined total of 79 and 73 studies associated with the domains of "Environmental Sciences" and "Environmental Studies". Furthermore, within the realms of "Business," "Economics," "Engineering," and "Multidisciplinary Psychology," the research landscape comprises 45, 10, 10, and 12 studies, respectively.

Table 3. Distribution of studies on sustainable leadership according to the WoS index

Citation Index Type	Number of studies

Social Science Citation Index	152
Emerging Resources Citation Index	99
Extended Science Citation Index	98
Conference Paper Citation Index (Social and Humanities)	83
Book Citation Index (Social and Humanities)	29
Conference Paper Citation Index (Science)	18
Book Citation Index (Science)	3
Arts and Humanities Citation Index	1

Table 3 presents the distribution of studies about sustainable leadership within the Web of Science (WOS) index. Upon careful examination of Table 3, it becomes evident that the majority of research publications addressing this topic are categorized under the "Social Sciences Citation Index." Specifically, the Social Sciences Citation Index encompasses a total of 152 studies conducted on this subject. Moreover, an investigation into various citation index categories, including the "Emerging Sources Citation Index", "Expanded Science Citation Index", "Conference Proceedings Citation Index (Social and Human Sciences)", "Book Citation Index (Social and Human Sciences)", and "Conference Proceedings Citation Index (Physical Sciences)," reveals that 99, 98, 83, 29, and 18 studies have been indexed in each of these respective categories. In contrast, the citation index categories with the lowest representation of related studies are the "Book Citation Index (Physical Sciences)" and the "Arts and Humanities Citation Index," each containing three and one study, respectively.

Keywords Analysis

A visual mapping analysis was performed employing the VOSviewer software to illustrate the prevailing keywords and their interrelationships within the body of literature about sustainable leadership as indexed in the Web of Science. By establishing a selection threshold of five within the VOSviewer software, a visual map was constructed, featuring 24 out of the 923 most frequently utilized keywords in this domain. Figure 2 illustrates the resulting visual map, while Table 4 presents the top 10 keywords, along with their corresponding frequencies, that were most frequently employed in the literature.
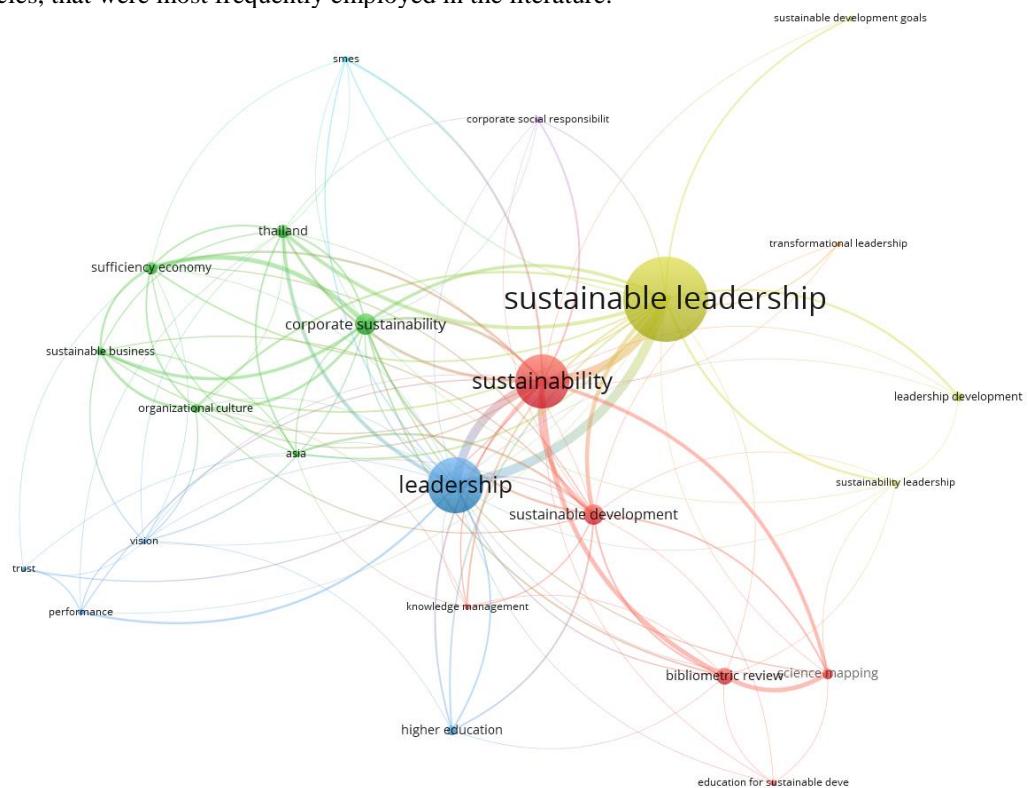
Figure 2. Types of words used related to sustainable leadership

As depicted in Figure 2, an analysis of studies about sustainable leadership reveals the prominence of three keywords: sustainability, sustainable leadership, and leadership. Furthermore, the subject is associated with several other significant terms, such as sustainable development, bibliometric analysis, corporate sustainability,

and higher education. An interrelation is observed between the terms sustainability and sustainable development and bibliometric analysis. Similarly, the term leadership exhibits close associations with higher education, success, trust, and vision. Figure 2 also illustrates the connection between sustainable leadership, leadership development, and transformational leadership. The keywords illustrated in Figure 2, along with the corresponding frequencies of their occurrences in the conducted studies, have been documented in Table 4. It is evident from Table 4 that the term "sustainable leadership" is the most prevalent keyword associated with the subject matter, occurring 104 times.

Table 4. Mostly used sustainable leadership keywords

Word	Number of Uses
Sustainable leadership	103
Leadership	64
Sustainable	62
Corporate sustainability	22
Sustainability development	21
Bibliometric review	17
Thailand	13
Sufficiency economy	12
Science mapping	11
Higher education	10

Following this, the next frequently employed keywords are "leadership" and "sustainability," with frequencies of 64 and 62, respectively. The remaining terms, apart from the top three, exhibit comparatively lower usage frequencies, typically around 22 or less. These terms, listed in decreasing order of frequency, encompass "corporate sustainability", "sustainable development", "bibliometric analysis", "Thailand", "competency economy", "science mapping", and "higher education".
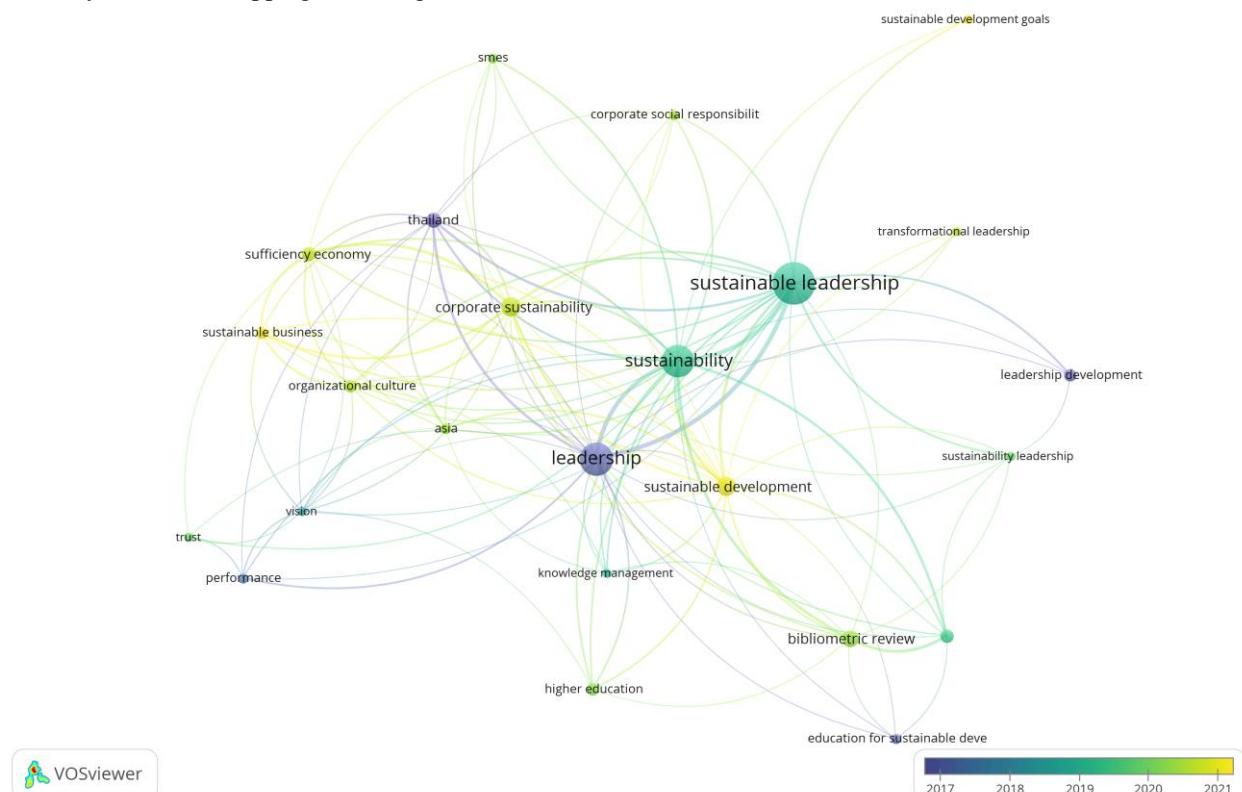
Figure 3. Distribution of keywords used regarding sustainable leadership by years

The VOSviewer software facilitates the retrieval of the temporal distribution of identified keywords about sustainable leadership. This functionality allows for an investigation into the periods during which these keywords garnered greater prominence. Figure 3 illustrates a visual map representing the chronological distribution of keywords utilized in research on sustainable leadership. Upon scrutiny of Figure 3, it is discernible that in 2017, the keywords "leadership", "Thailand", and "education for sustainable development" exhibited noteworthy prominence. Between 2018 and 2020, the keywords "sustainability", "sustainable

leadership", and "bibliometric analysis" assumed central positions, and their interconnections with previously prevalent keywords from earlier years are evident in Figure 3. In 2021 and subsequent years, keywords such as "sustainable development", "corporate sustainability", "competency economy", and "sustainable business" garnered substantial attention. Figure 4 provides a visualization of keyword density, with yellow signifying high density, green denoting moderate density, and navy blue indicating low density. Upon examination of Figure 4, it is apparent that "leadership", "sustainability", and "sustainable leadership" are the most heavily utilized keywords, while the other keywords mentioned in Figure 3 exhibit moderate levels of utilization.
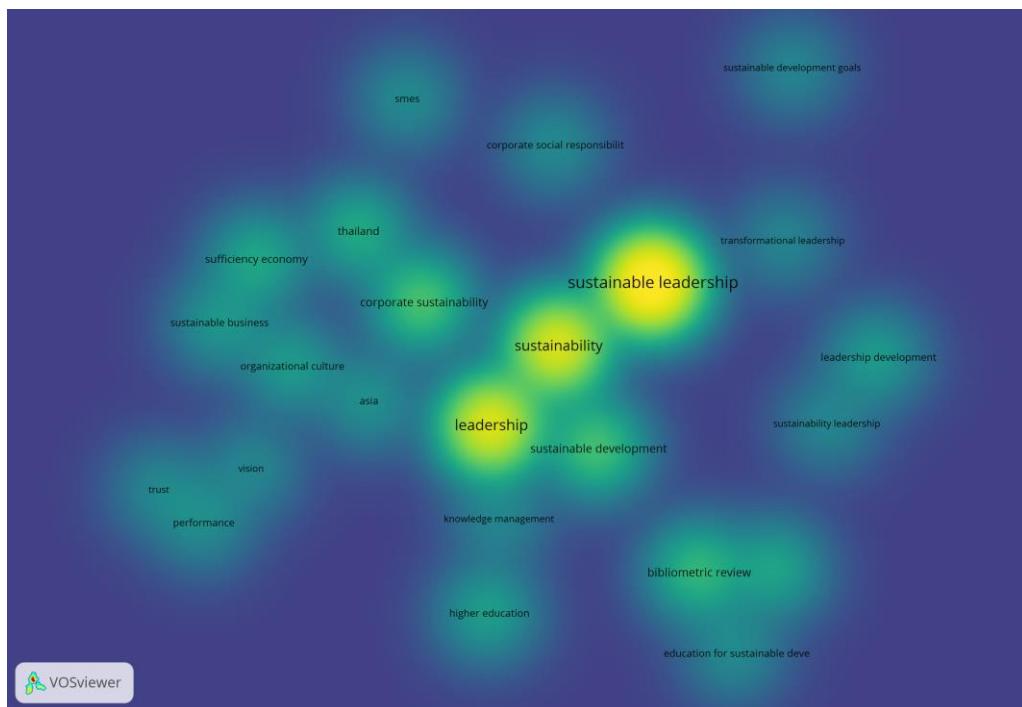
Figure 4. Density map of the keywords used for sustainable leadership

Co-Authorship Analysis

Through the utilization of co-authorship analysis, this study has discerned the key contributors, academic institutions, and international collaborators engaged in substantial collaborative efforts within the domain of sustainable leadership, as manifested in network visualizations. This co-authorship investigation has strategically underscored those scholars exhibiting the highest degrees of collaborative involvement in the realm of sustainable leadership research. Because of this comprehensive analysis, it was ascertained that 823 authors were encompassed within this purview. By imposing a criterion of a minimum of four publications and citations, it became evident that 13 researchers met this predefined threshold. Figure 5, provided herein, furnishes a network map delineating the identities of researchers who partake in the most robust collaborative endeavors amongst themselves.
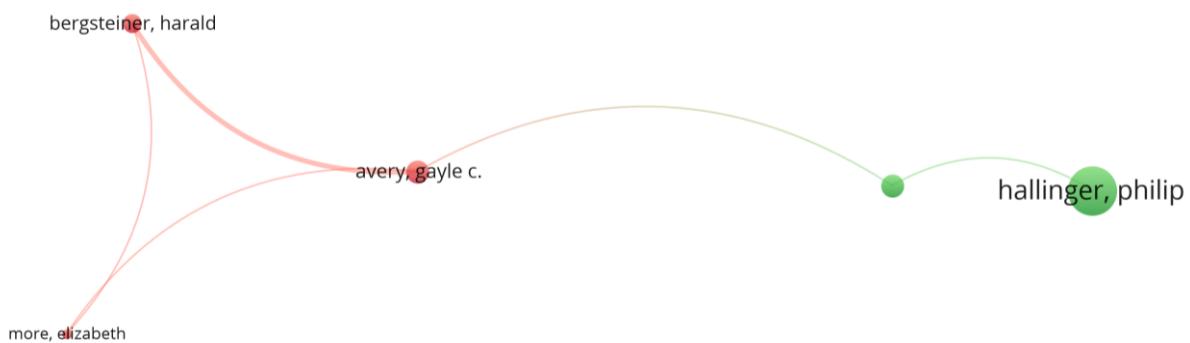
Figure 5. Co-authoring network map

Upon thorough analysis of Figure 5, it becomes apparent that the researchers exhibiting the most substantial patterns of co-authorship within the field of sustainable leadership are, in respective order, Philip Hallinger,

Gayle C. Avery, Harald Bergsteiner, and Elizabeth More. Furthermore, Table 5 supplements Figure 5 by presenting detailed data on the authors who have contributed significantly to the literature on sustainable leadership, encompassing their publication counts and citation statistics.

Table 5. Authors engaged in research in the field of sustainable leadership, publication, and citation counts

Author	Number of publications	Number of citations
Philip Hallinger	24	604
Sooksan Kantabutra	21	289
Qaisar Iqbal	16	337
Gayle C.Avery	10	160
Suparak Suriyankietkaew	10	226
Harald Bergsteiner	8	118
Hazlina Ahmad Noor	8	281
Wadim Strielkowski	7	22
More Elizabeth	4	20

As illustrated in Table 5, the most prolific researcher in the field of sustainable leadership is undeniably Philip Hallinger, who has amassed 24 published articles and garnered 604 citations. Subsequently, other prominent researchers in the field, in descending order, include Sooksan Kantabutra, Qaisar Iqbal, Gayle C. Avery, and Suparak Suriyankietkaew, each contributing 21, 16, 10, and 10 published articles, respectively, and accumulating citation counts of 289, 337, 160, and 226, respectively. Harald Bergsteiner, Hazlina Ahmad Noor, Wadim Strielkowski, and Elizabeth More have also made notable contributions, producing 8, 8, 7, and 4 articles, respectively, and accumulating citation counts of 118, 281, 22, and 20, respectively.

In the context of identifying universities with significant engagement in sustainable leadership studies and presenting this information as a network map, a publication threshold of 4 was applied, resulting in the inclusion of 20 universities out of a total of 481 universities meeting this criterion. Table 6 provides an overview of these universities, detailing the number of studies conducted and citations received within their respective institutions.

Table 6. Universities working in the field of sustainable leadership

University	Number of publications	Number of citations
Mahidol University	66	1184
Johannesburg University	22	602
Macquarie University	17	252
Ural State University	17	6
Malaysia Sains University	12	290
Australian Catholic University	10	98

As evident from the data presented in Table 6, the universities that have made the most significant contributions in terms of publications related to sustainable leadership, ranked in descending order, include Mahidol University, the University of Johannesburg, Macquarie University, Ural State University, Malaysia Science University, and Australian Catholic University. Notably, Mahidol University stands out as the most prolific institution, having produced 66 articles and accumulated 1184 citations in the field of sustainable leadership. Following closely, the University of Johannesburg is positioned as the second most productive institution, with 22 articles and 602 citations associated with sustainable leadership.

To visualize international collaborations in the context of sustainable leadership, a network map was generated by applying a publication threshold of four. This analysis identified that out of 76 countries, 29 surpassed the specified threshold, leading to the creation of the network map depicted in Figure 6. In Figure 6, these countries have been clustered into seven distinct groups. Notably, in the cluster marked in red, Russia and Germany emerge as the most actively participating nations, a finding further supported by the data presented in Table 7. Additionally, Malaysia is highlighted in the blue cluster, while China and Australia are prominent in the green cluster. The light blue cluster is characterized by South Africa and Thailand; the purple cluster includes the United Kingdom; the orange cluster features the United States; and the yellow cluster displays Brazil as the leading country engaged in collaborative research efforts concerning sustainable leadership.
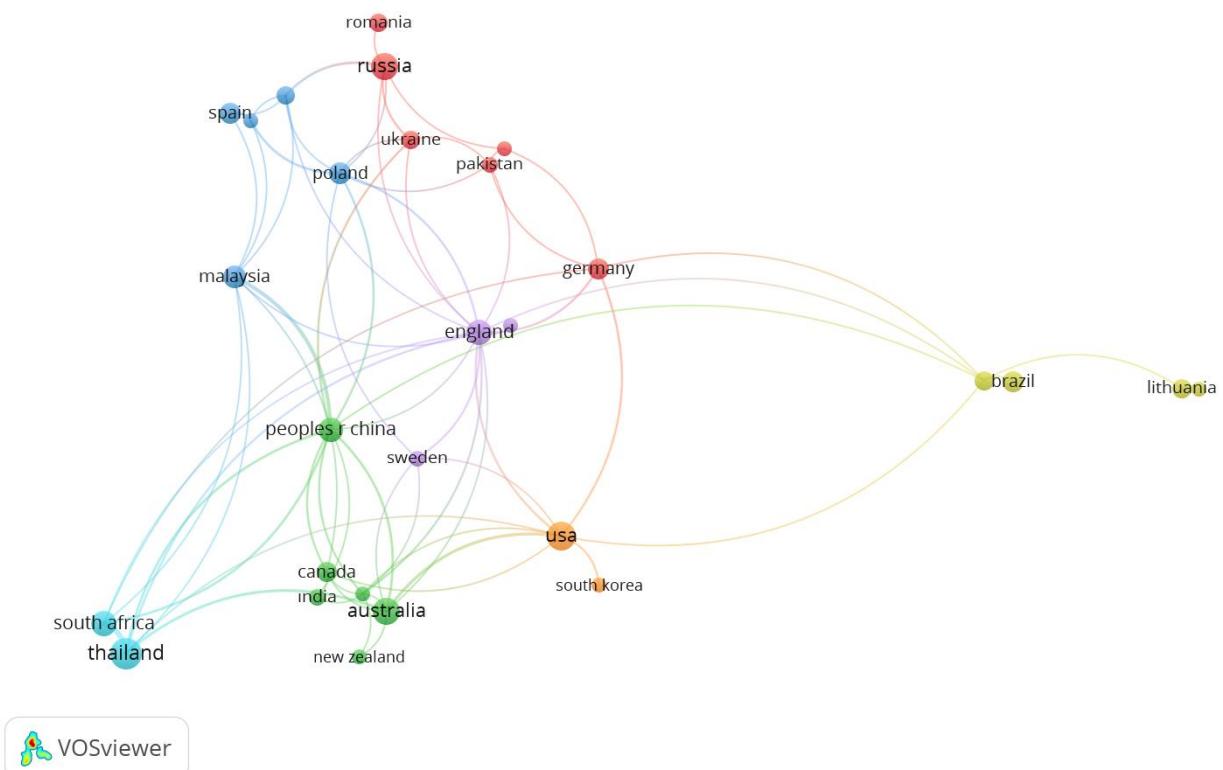
Figure 6. Cross-country collaboration visual network map

Considering the data presented in Table 7, it is evident that Thailand has taken the forefront in research productivity within the field of sustainable leadership, boasting 69 articles and 1230 citations. Subsequently, the United States, Australia, and Russia hold the second, third, and fourth positions, respectively, in terms of prolific research activity in this domain. Germany and Brazil are situated in the tenth and eleventh rankings, respectively, with both countries contributing 15 articles and garnering 29 and 183 citations, respectively.

Table 7. Countries working in the field of sustainable leadership

Country	Number of publications	Number of citations
Thailand	69	1239
United States of America	48	632
Australia	39	349
Russia	39	43
South Africa	30	632
England	28	290
Chinese	27	432
Malaysia	18	329
Poland	16	83
Germany	15	29
Brazil	15	183

Citation Analysis
In the context of conducting a citation analysis within the realm of sustainable leadership, comprehensive examinations of citations about documents, references, and countries were undertaken. To generate a network map depicting the most highly cited documents in the field of sustainable leadership, a citation threshold of two was applied, resulting in the inclusion of 212 documents out of 390 that met this specific criterion. The network map visualizing the citation analysis of these documents is presented in Figure 7. Within Figure 7, the presence of prominent and sizable circles signifies documents that have garnered a substantial volume of citations. Notably, researchers such as Sahlberg (2007), Hallinger (2018a), Macke (2019), and Iqbal (2020b) have authored the documents with the highest citation counts.
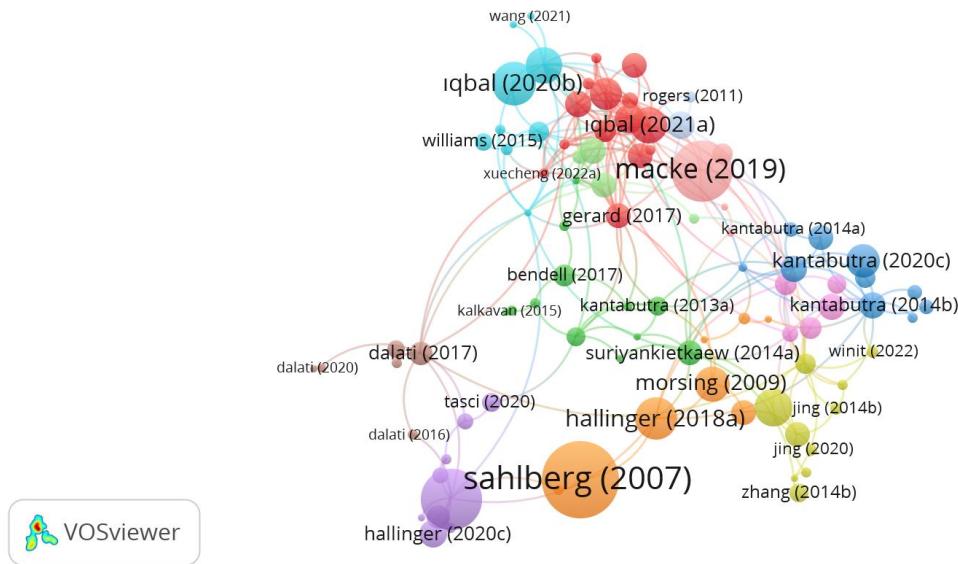
Figure 7. Visual network map of citations to documents

In Figure 7, a visual network map is provided, displaying the top 11 documents that have garnered the highest number of citations, along with details about their respective authors and citation counts. Notably, Sahlberg (2007), Osterblom (2015), Hargreaves (2004), and Macke (2019) have received 225, 149, 142, and 142 citations, respectively, for their respective works, establishing them as the authors of the most highly cited documents in the field to date. Additionally, Liu (2018), Udomsap (2020), Iqbal (2020b), Hallinger (2018a), McSherry et al. (2012), Park (2021), and Suriyankietkaew (2016a) have each contributed documents that have earned 87, 83, 75, 67, 57, 55, and 54 citations, respectively, thereby solidifying their positions as prominent researchers of the most highly cited documents within the field.

Table 8. The top eleven most cited documents

Author	Number of publications
Sahlberg (2007)	225
Osterblom (2015)	149
Hargreaves (2004)	142
Macke (2019)	142
Liu (2018)	87
Udomsap (2020)	83
Iqbal (2020b)	75
Hallinger (2018a)	67
McSherry (2012)	57
Park (2021)	55
Suriyankietkaew (2016a)	54

To identify the most highly cited sources, a threshold of 5 documents was chosen, resulting in 7 sources meeting this criterion out of a total of 204 sources. Figure 8 provides a visual representation of the citation network among these sources.
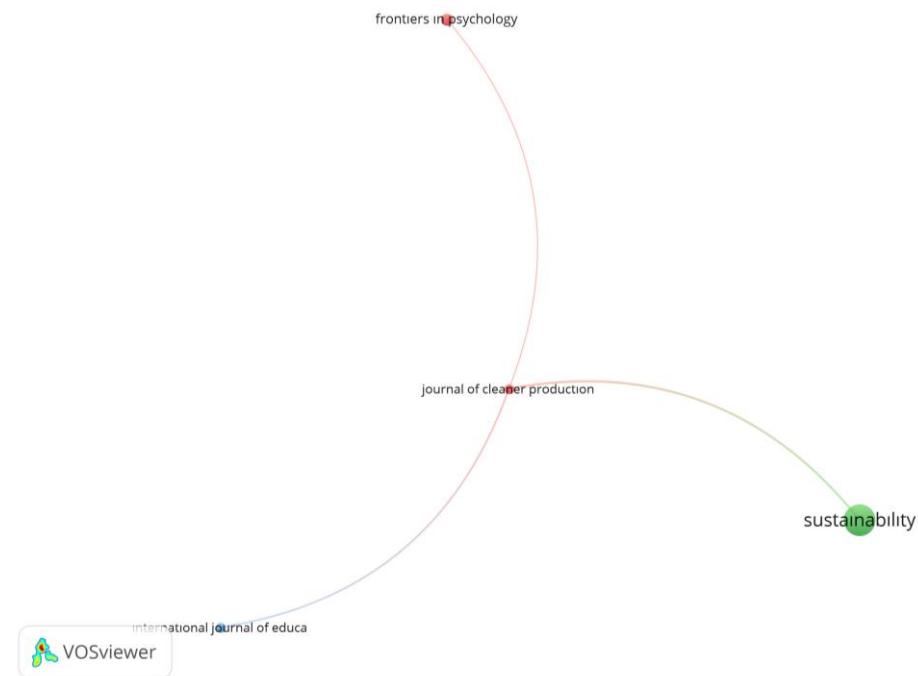
Figure 8. Link network map of citations to sources

Figure 8 illustrates the collaborative network of the most cited publications in the field of sustainable leadership, encompassing four key sources. The analysis reveals that the most frequently cited source is the "Sustainability" journal, with 678 citations. Following closely, the "Journal of Cleaner Production" ranks second with 362 citations. In the third position, we find the "International Journal of Education" with 47 citations, while "Sustainable Leadership for Entrepreneurs" occupies the fourth position with 36 citations. By applying a citation count threshold of 5 to articles in the domain of sustainable leadership, it was observed that 21 out of 76 countries met this criterion in terms of being cited. Figure 9 provides a citation network map by country. According to Figure 9, countries receiving the highest number of citations in the field of sustainable leadership are grouped into three distinct clusters. Thailand stands out as the most cited country with 1239 citations, followed by South Africa with 632 citations in second place. The United States and China rank third and fourth, respectively, with 632 and 432 citations each.
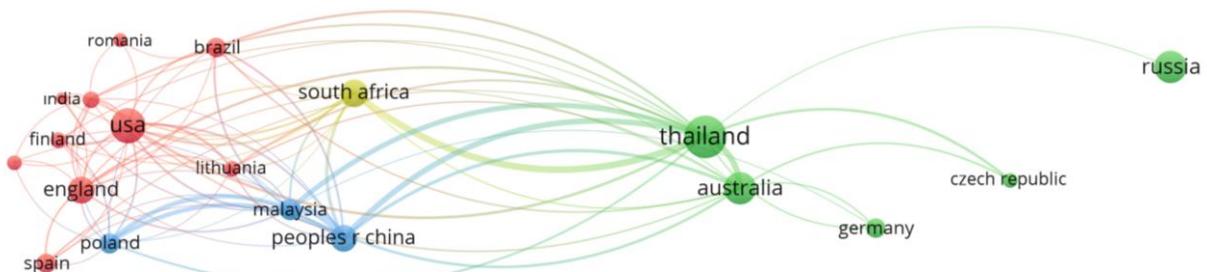
Figure 9. Visual map of citations to countries

The visual map depicted in Figure 9 has been converted into a tabular representation, as shown in Table 9. Table 9 provides information regarding the countries that receive the highest number of citations in the domain of sustainable leadership, including the respective quantities of documents and citations originating from these countries related to the subject.

Table 9. Distribution of documents and citation numbers by country

Country	Number of documents	Number of citations
Thailand	69	1239
South Africa	30	632
United States of America	48	632
Chinese	27	432
Australia	39	349
Malaysia	18	329

England	28	290
Finland	10	290
Canada	11	242
Brazil	15	183

As illustrated in Table 9, the country that garners the highest number of citations about the subject is Thailand. Thailand boasts a total of 69 scholarly works in this domain, accompanied by a substantial citation count of 1239. In the second position, South Africa emerges as the recipient of the second-highest citations (632 citations), supported by a document count of 30. Meanwhile, the United States is recognized as the primary contributor to the most-cited documents, amassing 632 citations. This commendable citation tally is underpinned by the publication of 48 documents. Ranking subsequently, China, Australia, and Malaysia secured the fourth, fifth, and sixth positions, amassing 432, 349, and 329 citations, respectively. Continuing down the list, the table proceeds to feature the rankings of the United Kingdom, Finland, Canada, and Brazil. These nations have garnered 290, 290, 242, and 183 citations, respectively, while the document counts for these countries are 28, 10, 11, and 15, respectively.

Co-Citation Analysis

Co-citation analysis stands as an innovative method employed to comprehend the cognitive structure within a scientific domain. This analysis technique encompasses the tracking of pairs of source articles that are co-referenced within source articles. When specific pairs of articles are co-referenced by multiple authors, it leads to the emergence of research clusters. In the context of this study, the examination of research related to sustainable leadership through co-citation analysis involves the creation of network maps that depict the interrelationships between cited references, source articles, and authors (Gerçek and Gerçek, 2022).

By imposing a minimum citation count threshold of 20 to determine the network map of co-cited references on sustainable leadership, it was ascertained that 10 references out of a total of 17,193 citations met this threshold. Figure 10 provides a visual representation of the network map obtained from this analysis. As delineated in Figure 10, a majority of the studies within this subject area predominantly co-cite the reference with the highest co-citations, which is Avery (2011), accounting for 59 co-citations. The second-most co-cited reference, with 34 co-citations, is Hallinger (2018). Hargreaves (2007) ranks as the third-most co-cited reference, with 27 co-citations. Zupic and Čater (2015) claim the fourth position, having garnered 25 co-citations.
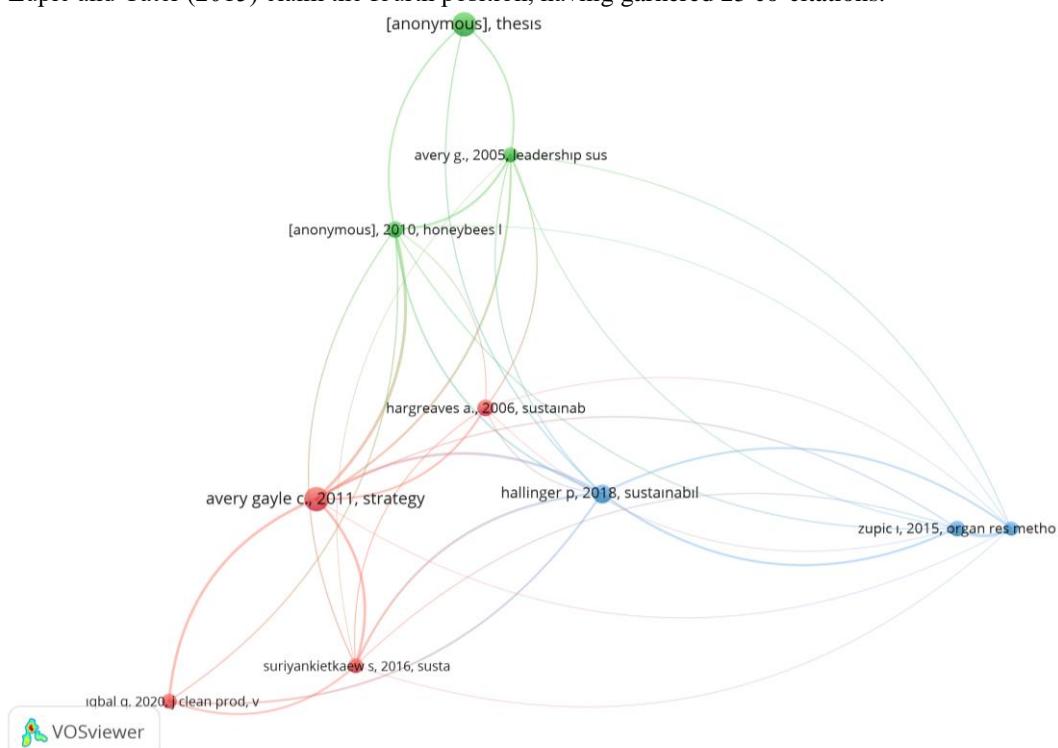
Figure 10. Network image of the most commonly cited references

To establish the network map of co-cited references on sustainable leadership, a minimum citation count threshold of 60 was imposed, revealing that 29 references out of 8,444 citations met this criterion. Figure 11, displayed herein, provides the visual representation of the resulting network map. As elucidated in Figure 11, the reference receiving the highest degree of co-citation is the journal "Sustainability-Basel," which amasses 490 citations. Conversely, the "Journal of Clean Production" has achieved the second-highest co-citation count, with 462 citations.
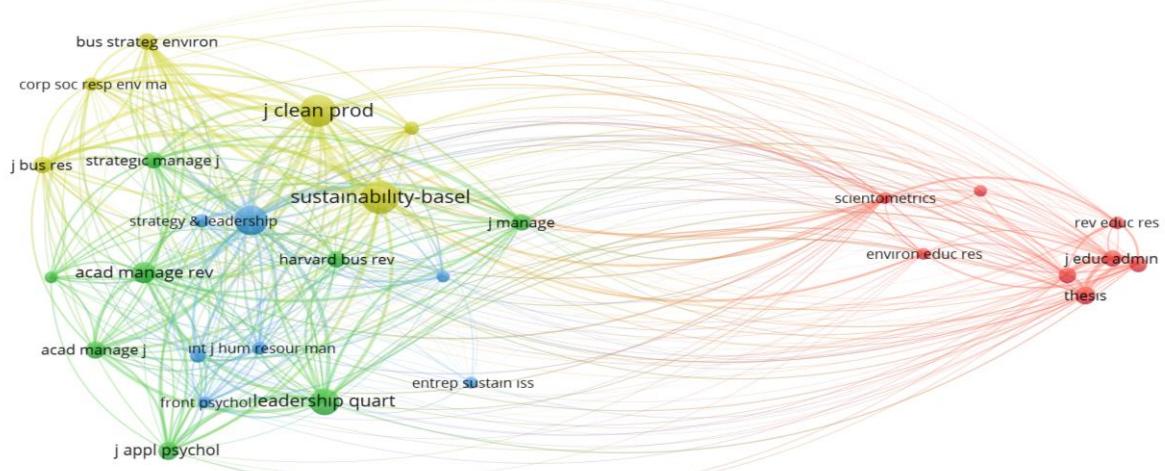
Figure 11. Network image of the most commonly cited sources (journals)

Lastly, to construct the network map of co-cited authors in the context of sustainable leadership, a minimum citation count threshold of 20 was applied, revealing that 35 authors out of a total of 12,234 citations satisfied this criterion. Figure 12, presented herewith, offers a visual representation of the resultant network map. As delineated in Figure 12, the most co-cited authors are organized into three distinct clusters. Notably, Philip Hallinger ranks as the foremost co-cited author, amassing 196 citations. Conversely, Sooksan Kantabutra has achieved the status of the second most co-cited author with 173 citations, while Qaisar Iqbal, with 135 citations, holds the position of the third most co-cited author.
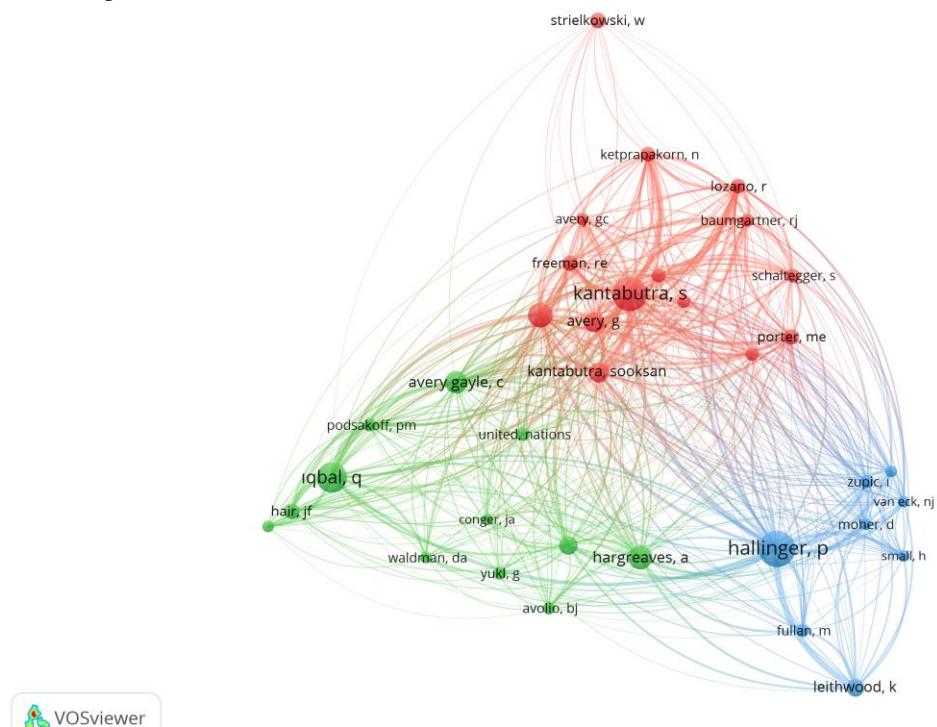
Figure 12. Network image of the most commonly cited authors

Conclusion

This study seeks to conduct a bibliometric analysis of works containing the term "sustainable leadership" in the Web of Science database, aiming to provide an updated overview of the field. VOSviewer software was utilized for visualizing the data extracted from the Web of Science database. The bibliometric analysis conducted within the scope of this research revealed that studies related to "sustainable leadership" first emerged in 2002, with a total of 390 studies being conducted between 2002 and 2023. The prevalence of articles as the predominant document type suggests that this field has garnered substantial interest and scholarly inquiry within academic circles. Nevertheless, the relatively lower representation of non-article document types, such as conference papers, book chapters, and review articles, indicates a demand for a greater diversity of document types in this area of study.

A closer examination of studies conducted between 2002 and 2023 on sustainable leadership demonstrates a consistent upward trajectory of interest in this subject. This upsurge in interest can be attributed to the United Nations' establishment of sustainability goals, which have precipitated significant transformations in the realm of education. Education has been recognized as a fundamental instrument in achieving sustainability objectives, thereby prompting an increase in research endeavors related to sustainable leadership (Bulut et al., 2018). This phenomenon reflects a shift in focus from imparting solely academic knowledge to students to also encompassing topics such as sustainability, ethics, and social responsibility (Çalık, 2006). This paradigm shift necessitates an enhancement of knowledge and competencies on sustainability among educational leaders. Furthermore, evidence suggests that climate change and environmental issues have redirected educational leaders and institutions towards adopting more sustainable approaches (Ay et al., 2020), stimulating the examination and development of sustainable leadership in education. It underscores the role of educational institutions in modeling sustainable leadership and posits that their management and leadership approaches, serving as exemplars for other sectors, inevitably lead to an increase in research on sustainable leadership (Özüdoğru et al., 2014). This phenomenon underscores the rising awareness and activism related to sustainability among the younger generation. These young individuals demand that educational leaders and institutions take more effective steps toward sustainability, thereby driving an increase in research on sustainable leadership (Sezgin et al., 2021). It reflects the need for the education system to adapt rapidly to changing conditions related to sustainability. This, in turn, necessitates that leaders embrace flexible, innovative, and sustainable approaches (Tüm, 2020). The growing sustainability expectations of society and the business world are pushing educational leaders towards more sustainable strategies, thus contributing to the growth of research on sustainable leadership (Erol, 2011).

The study's findings reveal that Thailand is the country with the highest number of publications on sustainable leadership. Various dynamics underlie the intense academic interest in sustainable leadership observed in Thailand (Kantabutra, 2012). Firstly, Thailand's geographical location and economic growth potential incentivize a particular emphasis on sustainability issues. Thailand occupies a strategic position in Southeast Asia, which brings with it significant environmental sustainability and leadership challenges. Furthermore, the country's rapidly growing economy has made sustainability principles more prominent in both the business world and society at large (Suriyankietkaew & Avery, 2016). This economic transformation and growth have triggered research into sustainable leadership within academia. Secondly, Thailand's cultural and societal context plays a pivotal role in shaping studies on sustainable leadership. Thai society places great importance on environmental issues and the preservation of natural resources. Societal values and sensitivity towards environmental conservation motivate academic research on sustainable leadership (Suriyankietkaew, 2016). Additionally, the increasing activism and environmental awareness among the younger generation are pushing educational institutions and research centers in the country to put more effort into sustainable leadership. When these factors converge, it becomes clearer why research on sustainable leadership has become so concentrated in Thailand.

Scientific investigations into sustainable leadership have centered around three key terms to facilitate in-depth understanding. These pivotal concepts are sustainability, sustainable leadership, and leadership. Building on these conceptual foundations, other significant terms related to the subject, such as sustainable development, bibliometric analysis, corporate sustainability, and higher education, have also been examined, incorporating noteworthy insights into the topic. Particularly, the term sustainability exhibits meaningful overlaps with sustainable development and bibliometric analysis, while the term leadership extends beyond effective management within higher education institutions, encompassing the construction of success, trust, and vision. In this context, research on sustainable leadership provides a critical framework for comprehending how leadership approaches and the role of educational institutions in the context of sustainability can be optimized in the pursuit of sustainability goals.

Using VOSviewer for the analysis of the field of "sustainable leadership" the most frequently used terms were categorized into three distinct clusters: "sustainability", "sustainable leadership", and "leadership". This clear conceptual clustering reflects the fundamental keywords at the core of studies on sustainable leadership. While the concept of sustainability aligns with terms such as sustainable development and bibliometric analysis, the leadership concept extends beyond the effective management of higher education institutions to play a decisive role in the construction of success, trust, and vision. In this context, research on sustainable leadership presents a crucial framework for in-depth comprehension of the complexity and significance of sustainability and leadership in this field.

The analysis of the network map of countries collaborating on research related to "sustainable leadership" was conducted to reflect the intensity of collaboration among countries. In this context, countries with at least four publications were considered for the creation of the collaboration network map, and the results obtained were presented. The analysis, which included 76 countries, revealed that 29 countries exceeded the defined threshold for collaboration. The complexity of collaborating countries is reflected in the network map, which concentrates on seven distinct clusters. Russia and Germany, highlighted in red, emerge as the most prolific countries with the highest number of studies in a cluster. Other clusters, denoted by blue, green, light blue, purple, orange, and yellow, respectively, feature countries such as Malaysia, China, and Australia; South Africa and Thailand; the United Kingdom; the United States; and Brazil as the most actively contributing nations These findings indicate that research on sustainable leadership enjoys a broad international presence with extensive collaboration among countries.

In the analysis focusing on the authors of the most cited documents in the field of sustainable leadership, several prominent authors were identified: Sahlberg (2007), Osterblom (2015), Hargreaves (2004), Macke (2019), Liu (2018), Udomsap (2020), Iqbal (2020b), Hallinger (2018a), McSherry et al. (2012), Park (2021), and Suriyankietkaew (2016a). These authors have garnered the highest citation counts for their respective works on sustainable leadership. Furthermore, the analysis considered the most frequently cited sources, highlighting journals such as "Sustainability", "Journal of Cleaner Production", "International Journal of Education", and "Sustainable Leadership for Entrepreneurship". These sources exemplify widely referenced journals and publications within the field of sustainable leadership. The distribution of articles related to sustainable leadership based on the countries they cite reveals that Thailand, South Africa, the United States, and China are the countries with the highest number of citations. These findings underscore that research in the field of sustainable leadership commands extensive international interest and influence.

The analysis of common references that receive joint citations in the context of sustainable leadership indicates that Avery G.C. (2011) is the most frequently cited reference among studies related to the subject, with a total of 34 citations. Following closely is the reference Hallinger (2018), which also boasts 34 citations. In third place is the reference Hargreaves (2006), cited 27 times. Similarly, Zupic and Čater (2015) exert significant influence in the field of sustainable leadership, with 27 citations. Moreover, when examining the common references that receive the most citations, the "Sustainability-Basel" journal leads with 490 citations as the most frequently cited source. This underscores the far-reaching impact of studies on sustainable leadership in the academic literature. The "Journal of Clean Production" closely follows, with 462 citations, as the second most frequently cited source. Lastly, when analyzing the authors commonly cited in the context of sustainable leadership, the most frequently cited authors are categorized into three groups. According to this analysis, Philip Hallinger emerges as the top author with 196 citations. Sooksan Kantabutra stands out as the second most cited author with 173 citations, and Qaisar Iqbal ranks third with 135 citations. These authors occupy prominent positions due to their contributions and influence in the field of sustainable leadership.

Recommendations

To stimulate an increase in research on sustainable leadership in Turkey, several strategic recommendations can be devised. Firstly, universities and academic institutions can heighten awareness of this field by crafting course content and programs that encompass sustainable leadership. The adoption of an interdisciplinary approach that enables students from diverse disciplines to comprehend and apply sustainable leadership principles is essential. School administrators, educators, and academic staff can benefit from training and workshops designed to enhance their knowledge and competencies in sustainable leadership, thereby cultivating a culture of qualitative research in the field.

Secondly, the encouragement of collaborations between the public and private sectors can contribute to an upswing in research and practical applications related to sustainable leadership. Collaborative initiatives with

the business world and civil society organizations can engender research that furnishes solutions to real-world challenges. Such partnerships can amplify the impact of academic research and translate it into tangible outcomes in the sphere of sustainable leadership. Additionally, providing research grants and support to researchers and academics engaged in the field of sustainable leadership is a significant stride toward increasing the quantity and quality of research.

Author (s) Contribution Rate
The author independently conducted each stage of the research study.

Conflicts of Interest
There are no conflicts of interest.

Ethical Approval
The study does not contain any material that would require ethical permission.

References

Avery, G. C., & Bergsteiner, H. (2011). How BMW successfully practices sustainable leadership principles. *Strategy & Leadership, 39*(6), 11-18.

Ay, F., & Erik, N. Y. (2020). Üniversite Öğrencilerinin Küresel Isınma Ve İklim Değişikliğine Yönelik Bilgi Ve Algı Düzeyleri. *Cumhuriyet Üniversitesi Sosyal Bilimler Dergisi*, 44(2).

Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal, 26*(3), 197-218.

Bulut, B., & Çakmak, Z. (2018). Sürdürülebilir Kalkınma Eğitimi Ve Öğretim Programlarına Yansımaları. *Uluslararası Türkçe Edebiyat Kültür Eğitim (Teke) Dergisi*, 7(4), 2680-2697.

Chen, C. (2017). Science mapping: a systematic review of the literature. Journal of Data and Information Science, 2(2), 1–40.

Çalık, C. (2006). Örgütsel Sosyalleşme Sürecinde Eğitimin Değişen Rolü Ve Önemi. *Kastamonu Eğitim Dergisi*, 14(1), 1-10.

Çayak, S. (2021). The effect of sustainable leadership behaviors of school principals on teachers' organizational commitment and job satisfaction. *Discourse and Communication for Sustainable Education*, *12*(1), 102-120.

Çayak, S., Çetin, M. (2018). Sustainable leadership scale: Validity and reliability study. *Electronic Turkish Studies*, 13(11), 1561-1582.

Dalati, S., Raudeliūnienė, J., & Davidavičienė, V. (2017). Sustainable leadership, organizational trust on job satisfaction: empirical evidence from higher education institutions in Syria. *Business, Management and Economics Engineering*, 15(1), 14-27.

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of business research*, 133, 285-296.

Erer, B., Demirel, E., & Savaş, Y. (2023). Dijital liderliğin görsel haritalama tekniğine göre bibliyometrik analizi. *Uluslararası Liderlik Çalışmaları Dergisi: Kuram ve Uygulama*, 6(1), 1-22.

Erol, N. (2011). Toplumsal değişme ve eğitim:"Temel ilişkiler, çelişkiler, tartışmalar". *Gazi Akademik Bakış*, (09), 109-122.

Gerçek, M., & Gerçek, R. G. (2022). İnsan Kaynakları Yönetimi Çalışmalarının Bibliyometrik Analizi (2017-2021). *Ömer Halisdemir Üniversitesi İktisadi Ve İdari Bilimler Fakültesi Dergisi, 15*(4), 816-832.

Hallinger, P., & Suriyankietkaew, S. (2018). Science mapping of the knowledge base on sustainable leadership, 1990–2018. *Sustainability*, 10(12), 4846.

Hargreaves, A. (2007). Sustainable leadership and development in education: Creating the future, conserving the past. *European Journal of education*, *42*(2), 223-233.

Hargreaves, A., & Fink, D. (2004). The seven principles of sustainable leadership. *Educational leadership*, 61(7), 8-13.

Hargreaves, D. H., & Hargreaves, D. (2006). Social relations in a secondary school. Routledge.

Iqbal, Q. (2020). The era of environmental sustainability: Ensuring that sustainability stands on human resource management. *Global Business Review*, 21(2), 377-391.

Iqbal, Q., Ahmad, N. H., & Halim, H. A. (2020). How does sustainable leadership influence sustainable performance? Empirical evidence from selected ASEAN countries. *Sage Open*, 10(4).

Kahraman, M. (2022). Web of Science Veri Tabanına Göre Türkiye'de Kent Çalışmaları. *Planlama*, 32(3).

Kantabutra, S. (2012). Putting Rhineland principles into practice in Thailand: sustainable leadership at bathroom design company. *Global Business and Organizational Excellence*, 31(5), 6-19.

Leal Filho, W., Eustachio, J. H. P. P., Caldana, A. C. F., Will, M., Lange Salvia, A., Rampasso, I. S., ... & Kovaleva, M. (2020). Sustainability leadership in higher education institutions: An overview of challenges. *Sustainability*, 12(9), 3761.

Liao, Y. (2022). Sustainable leadership: A literature review and prospects for future research. *Frontiers in Psychology*, *13*, 1045570.

Liu, H., & Heizmann, H., (2018). Becoming green, becoming leaders: Identity narratives in sustainability leadership development. *Management Learning*, 49(1), 40-58.

Macke, J., & Genari, D. (2019). Systematic literature review on sustainable human resource management. *Journal of cleaner production*, 208, 806-815.

Martinez, M. A., Cobo, M. J., Herrera, M. ve Herrera-Viedma, E. (2015). Analyzing the scientific evolution of social work using science mapping. *Research on Social Work Practice*, 25(2), 257–277.

McSherry, R., Pearce, P., Grimwood, K., & McSherry, W. (2012). The pivotal role of nurse managers, leaders and educators in enabling excellence in nursing care. *Journal of Nursing Management*, *20*(1), 7-19.

Mingers, J., & Leydesdorff, L. (2015). A review of theory and practice in scientometrics. *European Journal of Operational Research*, 246(1), 1-19.

Moreira, A., Sousa, M. J., and Cesário, F. (2022). Competencies development: The role of organizational commitment and the perception of employability. *Soc. Sci.* 11:125. doi: 10.3390/socsci11030125.

Österblom, H., Jouffray, J. B., Folke, C., Crona, B., Troell, M., Merrie, A., & Rockström, J. (2015). Transnational corporations as 'keystone actors' in marine ecosystems. *PloS one*, 10(5), e0127533.

Özüdoğru, G., & Çakır, H. (2014). Öğretim Elemanlarının Bilişim Teknolojileri Kullanımında Öğretmen Adaylarına Model Olma Farkındalıklarının İncelenmesi. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 15(2), 207-226.

Park, A., & Li, H. (2021). The effect of blockchain technology on supply chain sustainability performances. *Sustainability*, 13(4), 1726.

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., ... & Foley, J. A. (2009). A safe operating space for humanity. *Nature*, 461(7263), 472-475.

Sahlberg, P. (2007). Education policies for raising student learning: The Finnish approach. *Journal of education policy*, 22(2), 147-171.

Sezgin, A. A., & Elmasoğlu, K. (2021). Çevrimiçi Oyunlarda Eşitlik Arayışı: Minecraft YouTube Dizi İçeriğinde Fakir Köylü Kötü Kalpli Zengine Karşı. *İstanbul Gelişim Üniversitesi Sosyal Bilimler Dergisi*, 8(2), 368-386.

Suriyankietkaew, S. (2016). Effects of sustainable leadership on customer satisfaction: Evidence from Thailand. *Asia-Pacific Journal of Business Administration*, 8(3), 245-259.

Suriyankietkaew, S., & Avery, G. (2016). Sustainable leadership practices driving financial performance: Empirical evidence from Thai SMEs. *Sustainability*, 8(4), 327.

Tüm, G. (2020). Eğitimde İnovasyon ve Sosyal İnovasyon Etkileşimi. *Schriften zur Sprache und Literatur IV*, 375-385.

Udomsap, A. D., & Hallinger, P. (2020). A bibliometric review of research on sustainable construction, 1994–2018. *Journal of Cleaner Production*, 254, 120073.

Van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523-538.

Van Eck, N. J. ve Waltman, L. (2020). VOSviewer manual. Erişim: http://www.vosviewer.com/, 21.01.2023.

Visser, W., & Courtice, P. (2011). Sustainability leadership: *Linking theory and practice*. Available at SSRN 1947221.

Wright, J. D. (2002). No easy answers: Research and innovation for the forestry sector. *The Forestry Chronicle*, 78(4), 511-514.

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational research methods*, *18*(3), 429-472.

The Effect of Body Language-Centered Drama Activities on Students' Speaking Skills in Secondary School Turkish Teaching

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Abstract

The body is undoubtedly the first language of communication in human history. Body language, which dates back to the first human, was the first language with which humans communicated with each other. Human being is a social being; just as it needs nutrition, shelter, security, knowledge, respect and love, it also needs communication. Therefore, speaking skill has become one of the language skills that individuals use most in daily life throughout their lives. Drama method is a method that can be used to help people get to know themselves and their environment, improve their relationships, gain different perspectives, and increase social harmony. The aim of this research is to determine the effect of body language-centered drama activities on the development of students' speaking skills in secondary school Turkish teaching. The participants of the study consist of 55 7th grade students studying in a secondary school in Battalgazi district of Malatya province. In this research, mixed research method sequential explanatory design was used. A semi-experimental design was used in the quantitative part of the research, and the quantitative data of the research was collected using the Speaking Skills Attitude Scale (2017), and the phenomenology design was used in the qualitative part, and the data were collected with student diaries, semi-structured interview form and observation form. In the quantitative part of the research, a control and an experimental group were created. Experimental and control groups were determined according to the students' pre-test results from the attitude scale. According to the results of the Mann Whitney U test, the groups were found to be equivalent. In the experimental group, body language-centered drama prepared in the context of Turkish language teaching program achievements was taught, and in the control group, lessons were taught taking into account the current Turkish course curriculum. At the end of the research, a semi-structured interview was conducted with 9 experimental group students, and observations were made by taking pre- and post-videos of the students' body language-centered speaking skills. A reliability and validity study was conducted on the applied quantitative and qualitative data collection tools. Analysis of the post-tests in the experimental and control groups was made with the Mann Whitney U test. Qualitative data were analyzed with codes and categories created by content analysis and descriptive analysis.

When the results of the research were examined, it was concluded that the Turkish lesson taught with body language-centered drama activities was more effective than the normal Turkish lesson in terms of giving speaking skill gains. Similarly, it was observed that the interest and love of the students participating in the study regarding speaking skills increased after the body language-centered drama activities, and their anxiety decreased. In addition, it was observed that students began to use body language easily both in the classroom and in daily life. Looking at the results of the qualitative data of the research, it was seen that the students started to use body language in and outside the classroom, their speaking skills improved and even their existing speech disorders improved.

The study results were examined in the literature and compared from both similar and different perspectives. Looking at the results, researchers can make variations in their studies in order to obtain rich data; for drama practices, they should conduct pilot exercises before implementing the created drama workshops and pay attention to the physical characteristics of the place where the drama will be implemented; recommendations were made for institutions to give teacher candidates the opportunity to practice in drama classes in faculties of education and to provide drama training to teachers in in-service courses opened within the Ministry of National Education.

Keywords: Body language, speaking skill, creative drama, drama activities, secondary school student.

Introduction

Communication, which is as old as human history, is the transmission of news, information, a request, a conversation from one person to another, or from one center to another, through a primitive or advanced sign system (Türkçe Sözlük, 2013), and is a condition for a person to continue his life in health by allowing him to establish both internal and external balance (Ağca, 2001). The way for individuals to convey their views, thoughts and ideas to each other through speech, to mutually explain themselves and even introduce themselves, to convey information and skills to the other party in the form of a message, to relate the parts of a living universe, to share various events or situations that people have experienced with someone else, to convey them to others (Zıllıoğlu, 1998) is through healthy communication. Communication is the process of people mutually sharing their thoughts, feelings, knowledge and understanding each other. In this process, it is to convey to the other person in the way we intended and to create the expected reaction by getting what is wanted (Aytaş and Kaplan, 2019, p.1). Although it is generally thought that speaking is the most effective way to communicate, just talking does not mean that you are communicating with the other person. The speech must consist of meaningful and complementary words, be planned and contain the right messages (Bayraktar, 2006). The fact that our conversation is in this manner does not fully meet the communication. Because people do not communicate just by talking. Body language, called non-verbal communication, is also an important part of communication. Sometimes facial expressions, body posture, a look or gestures can easily convey what is intended (Işık, 2008). The body is the first language of communication in human history. The history of visual codes used in non-verbal communication dates back as far as human history (Zıllıoğlu, 2010). It can be said that body language, used with non-verbal communication, is the set of changes in gestures, facial expressions and body postures used by the individual to share emotions and ideas with the other person (Tayfun, 2009, p.133). In body language, which is supported by the tone of voice that gains value with successive movements in living conditions (Baltaş and Baltaş 1997, p.7), the main actor is the person himself and what supports the body language is what is felt at that moment. The change in an individual's face reflects his or her mood (Fast, 1999). Like all other languages, body language should be considered to consist of words, sentences and even punctuation marks; each gesture should be considered and examined as a single word and the different meanings it contains should be revealed (Pease, 2003). Ergin (2010) divided body language into six parts: head movements, facial expressions, gestures, facial expressions, space, clothing and touch. In his study, Güngör (2014) claimed that body language can be examined in two groups: attention-seeking and intention, and classified the elements that make up body language as facial and eye movements, hand and arm movements, clothing and voice. Zıllıoğlu (2010) mentioned factors such as silence, color and music of the voice, body language, space and time characteristics, color and clothing code, which play an important role in non-verbal communication, and also stated that body language includes facial expressions, use of the head, hand and arm, foot and leg, and body posture, etc.

When we look at the research on body language, in the 18th century in the work called "Marifetnâme", "Ibrahim Hakkı from Erzurum" examined body language in detail in the person of his son while explaining the conclusions that the reader will draw from the work and the lessons he will learn. In the 19th century, "Charles Darwin" published the book "The Expression of the Emotions in Man and Animals" and this book was used as a source for body language studies for a long time. In the 20th century, Mümtaz Tarhan's various studies, Doğan Cüceloğlu's studies on emotional expressions in facial expressions, and Ayhan Lecanep's studies on emotional facial expressions related to clinical psychology (Bağcı, 2008). When we look at all the research on body language, it can be said that body language is a subject of curiosity not only in our age but in every age, despite Reca stating that it is the magical communication language of today (Reca, 2017, p.13). When we look at the history of creation of people, we see that they exist with the body and communicate with the body. For this reason, the first language of communication in human history is their body. Being a social being, human beings need nutrition, shelter, security, knowledge, respect and love, as well as communication. To meet this need, people used verbal and written channels. In daily life, people use these channels mostly for speech. Arıkan stated that people need to talk to show their existence, to be accepted by society and to meet their needs (2011). Speaking, which is a language skill, is the process of transferring the emotions, thoughts and desires occurring in the mind to the other party through sounds. During this transfer, many organs and mental processes work together in an orderly manner. Speech is a complex process that includes many mental and physical factors. Speech is the transfer of the thinking feature that distinguishes human beings from other living creatures through sounds (Yaman, 2007). The verbal transmission of an individual's wishes, feelings and experiences is defined as speech (Özdemir, 2004). According to Vural, speaking is the beginning of mental formations, transferring these formations to language patterns and transforming them into sound with the help of gestures and facial expressions (2007). It is possible to raise speaking skills to the desired level by teaching the principles of meaningful, accurate and effective speaking through education and training. The speech used to express feelings, thoughts, wishes, dreams, etc. to other people around us and to understand them (Temizyürek et al., 2007, p.266) should not be random. Accurate, effective and meaningful speech can be counted as a skill so that

it does not remain only as a feature that distinguishes humans from other living creatures (Sağlam, 2010, p.14). The fact that this skill is not something that a person can use on his own, but that he can share with others (Yalçın, 2002, p.97) makes speaking skill training important.

During the education process, the behavior change that is desired to be deliberately made in the individual's behavior should be planned in advance, at what stage, how, with which method/technique and with a certain plan program. This design is very important in order for the skill to be imparted to result in the correct behavioral change. Drama, which has been one of the most used activities in education recently, is important in the development of speaking skills. In his study in 1999, Phillips also mentions that drama activities give students the chance to both speak and communicate, because the aim of drama, which is used as a method in education, is to change the perceptions and concepts that guide students' behavior through the experiences and experiences they have gained by doing (Bolton 1984; cited in Sağlam, 2006, p.94). It is known that drama, which began to be frequently used in education, was introduced into literature thanks to the methods that Harriet Finlay Johnson tried at Little Sompting School in Sussex, England, between 1897 and 1910. Finlay Johnson (1913) was accepted as the first person to use dramatic methods, and while talking about the many benefits of drama, he also specifically mentioned that it improved self-expression and communication skills (cited in Sapmaz, 2010, p.146-156). Similarly, it is stated in the drama course curriculum that drama will improve students' self-expression skills (MEB, 2018, p.7-8). In addition, drama, which is suitable for school education in every sense, is independent of tools such as an audience, a special place or costume, is easy to apply in the classroom, and combines learning with play are among the reasons why it is preferred. Finlay Johnson, one of the first teachers to use drama, used drama as a learning tool without reference to the audience (Sapmaz, 2010, p.162). Slade, on the other hand, stated that there is no need for a special place to perform drama and that drama should be done in classes where the current education process continues, and that drama should be a discipline in the same way that it is possible to accept history, geography and religion courses as disciplines in primary school (1969, p.150). Slade said that drama is both healing for children and sees drama as a therapeutic tool for them (1995). In drama activities carried out to improve speaking skills, students are in constant interaction, but focusing only on verbal interaction during this interaction will be contrary to the spirit of drama and the non-verbal dimension of communication will be overlooked. Body language, which appears as the projection of thinking onto the body, making its presence felt at every moment of life, also increases success in the learning environment. While listing the factors that increase learning success in his study, Sönmez drew attention to the importance of body language by saying the student's learning needs, the characteristics of the subject and material, the environment in which learning takes place, the use or non-use of technological developments, budget, duration, methods used in education and body language (Sönmez, 1994, s.107-108). In a study conducted by Mahrebian and Ferris (1967), it was stated that words have a 7% impact on people during communication, voice has a 38% impact, and body language used has a 55% impact. Özbent also supports the power of body language in communication by reaching the conclusion that the effectiveness of verbal language in communication is 35%, while body language, also referred to as non-verbal language, is effective in 65% (Özbent, 2007, p.266). Body language also attracts attention in that it supports verbal communication for a better understanding of the message and helps reveal the messages in the background (Dökmen, 2005).

Constructivism, which has an important place in education systems, is named in different ways such as "integrative, constructivist, constructivism" in the literature, and the name constructivist approach is used in this study. The constructivist approach started as philosophy and was used in fields such as sociology and anthropology, and then took its place in the educational sciences literature. Constructivist approach is defined as a theory of knowledge that explains philosophically about the nature of knowledge (Açıkgöz, 2003). Although constructivism is a theory that examines the ways that individuals acquire knowledge, over time it has become a theory that examines how learners structure knowledge rather than how they learn knowledge (Perkins, 1999). In the constructivist approach, the basic principles are that knowledge is learned rather than taught, the individuality of the student, the experiences that occur during learning, and the acceptance of knowledge as a process of interpreting and creating meaning (Charles, 2003). In this approach, each individual uses their prior knowledge, understanding and past experiences, and reconstructs new information in their own unique way (Pritchard & Woollard, 2010). In the constructivist learning process, the teacher takes into account the individual differences of the students and offers them appropriate options, gives instructions and helps the individual make his or her own decision. Instead of solving students' problems, the teacher enables the student to find his or her own solution (Aykaç & Ulubey, 2008). In this context, a method that makes it easier to access the individual's own past experiences and the lives of those around him and allows the information to be re-evaluated and interpreted with past information is the creative drama method. Creative drama is defined as the enactment of playful processes in which improvisation and role playing occur, and in which individuals review a life, an event, an idea, an abstract concept or behavior, and observations, emotions, experiences and experiences by rearranging pre-existing cognitive patterns through group interaction. (San, 2002). When the literature was examined, no study was found on the effect of body language-centered drama activities on

speaking skill, one of the basic language skills in the Turkish curriculum. It is thought that both body language and drama will be very useful in speaking skills, based on the supporting effect of success in the course.

Method

Model of the Research

The purpose of this research is to determine how body language-centered drama activities affect students' speaking skills in secondary school Turkish teaching. In this regard, mixed method was used in the research, in which both qualitative and quantitative research methods were used together, and a sequential explanatory design was used as a design. Quantitative and qualitative data obtained in mixed methods research can be used to check each other's accuracy, to support each other, to better explain situations where one of the data collection tools is inadequate, and to alternate with each other during the research. In the sequential explanatory design, first the quantitative data of the research are collected, analyzed, and then the quantitative data are supported by qualitative data and explained in detail (Creswell & Creswell, 2018).

The quantitative dimension of the research was designed with a quasi-experimental design with a pre-post test control group. Quasi-experimental research is the type of research that yields the most definitive results among scientific research. Because the researcher applies some comparable procedures and then examines their effects, the results obtained in this type of research are expected to lead the researcher to the most definitive interpretations (Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2011). Experimental research can generally be carried out with two groups, a control and an experimental group, or with one, two, three or more groups. In the experimental group, the application whose effect will be measured on the dependent variable is carried out, while in the control group, either no application is made or a different application is made than the experimental group. In all experimental designs, comparison for the experimental group, that is, the control group, is very important. Because the control group allows the researcher to determine whether the application whose effect is measured on the dependent variable is effective or more effective than the other application (Büyüköztürk et al. 2011, p.17). There is a certain order of stages during the implementation of the pretest-posttest control group design. First of all, the participants are assigned to the experimental and control groups impartially, then a pre-test is applied to the experimental and control groups before starting the application, after the independent variable is included only in the experimental group, a post-test is applied to both groups, and finally, it is compared whether there is any difference between the experimental and control groups (Gall, Borg and Gall 1996; Cohen et al. 2000 cited in Bozpolat, 2012: 93). In this study; there is one experiment and one control group.

Table 1.

Quantitative model of the research

Group	Before application	Process	After application	Permanence Test
Control Group	Application of the speaking skill scale as a pre-test	Implementation of the regular lesson	Application of the speaking skill scale as a post-test	-
Experimental Group	Application of the speaking skill scale as a pre-test	Implementation of body language-centered drama activity teaching	Application of the speaking skill scale as a post-test	Application of the speaking skill scale as a permanence test

In the qualitative part of the research, the phenomenology design was preferred. Phenomenology focuses on phenomena that we are aware of but do not have an in-depth and detailed understanding of. Phenomenology can be used for studies that aim to investigate these phenomena that we cannot fully understand (Yıldırım & Şimşek, 2008). Phenomenology focuses on how people define and perceive phenomena. Phenomenological study defines the common meaning of several people's lived experiences of a phenomenon or concept (Creswell, 2013, p.76) and deals with how people define phenomena and perceive them through their senses (Hurssel, 1993, cited in Merriam, 2014, p.9), the main purpose at this point is to reduce personal experiences about a phenomenon to a universal explanation (Van Manen, 1990, p. 177, cited in John W. Creswell, p. 76). In this research, this qualitative design is preferred since the experiences of the students participating in the study regarding the applications are examined.

Participants

This section primarily includes information about the population and sample used to collect the quantitative data of the research. Then, the study group used in the study, from which the qualitative data of the research was provided, was mentioned.

Population and Sample

The accessible population of the research consists of 7th grade students in secondary schools affiliated with the Ministry of National Education within the borders of Malatya province in the 2021-2022 academic year. The sample of the research consists of 7th grade students of a public school in Malatya Battalgazi district. Convenient sampling was used when selecting the sample. Appropriate sampling is defined as collecting data from a sample that the researcher can easily reach (Büyüköztürk, Çakmak Kılıç, Akgün, Karadeniz, & Demirel, 2020). The students in the sample of the research are 27 in the experimental group and 28 in the control group. According to Pallant (2016), having at least 15 participants in each cell allows reaching the appropriate sample number (Pallant, 2016). In this context, it can be said that sufficient sampling was achieved in the research. Experimental and control groups were determined in the light of the data obtained as a result of applying the scale to 7A and 7B students. The results of the Mann Whitney U Test, which was conducted to determine whether there were significant differences in the speaking skill attitude scores of the control group and experimental group students in the pre-application, are summarized in the table below.

Table 2.

Mann Whitney U Test results between the control group and the experimental group in the pre-application

	Group	N	Mean	SS	Mean square	Sum of squares	Mann-Whitney U	z	p
Interest and love	Control	28	70,71	9,23	27,48	769,50	363,50	-0,245	,807
	Experimental	27	71,00	12,23	28,54	770,50			
Anxiety	Control	28	18,57	5,25	25,54	715,00	309,00	-1,166	,244
	Experimental	27	20,62	5,60	30,56	825,00			

When the table above is examined, differences were observed in the speaking skill attitude score averages in the pre-application. ($\bar{x}_{interest \ and \ love \ control}$ =70,71; $\bar{x}_{interest \ and \ love \ experimental}$ =71,00; $\bar{x}_{anxiety \ control}$ =18,57; $\bar{x}_{anxietyexperimental}$ =20,62). As a result of the Mann Whitney U test, which was conducted to determine whether these differences were significant, the difference in the interest and love sub-dimension (Z= - 0.245; p>0.05) was found to be insignificant. Accordingly, in the pre-application, it was seen that the interest and love of the experimental group and control group students regarding speaking skills were similar. Likewise, it was observed that the difference in the mean scores in the anxiety sub-dimension was statistically insignificant (Z= -1.166; p>0.05). Based on these findings, it is interpreted that the experimental and control groups are equal in both the interest and love sub-dimension and the anxiety sub-dimension.

Study Group

In the qualitative part of this study, criterion sampling, one of the purposeful sampling types, was used. In criterion sampling, a study group can be formed according to criteria created by the researcher or predetermined (Yıldırım and Şimşek, 2008). The criteria of this study are being a 7th grade secondary school student and not having received any training on speaking skills.

Demographic information about the students in the study group of the research and which qualitative data collection tools they participated in are listed in Table 3.

Table 3.

Demographic information about the study group

Code Names/ Applications	P1(Lina)	P2(Aslı)	P3(Murat)	P4(Sedef)	P5(Meryem)	P6(Beyza)	P7(Büşra)	P8(Basri)	P9(Fulya)	P10(Metin)	P11(İlayda)	P12(Gülben)	P13(Sinem)	P14(Ceyda)	P15(Tomris)	P16(Merve)	P17(Derya)	P18(Ahu)	P19(Ahmet)	P20(Rabia)	P21(Damla)	P22(Göktuğ)	P23(Esin)
Meeting	+	+	+							+					+	+			+			+	+
Observation	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+
Diary	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Collection of Data
In this section, information will be given about the quantitative and qualitative data collection tools used in the research.

Quantitative Data Collection Tools
In the quantitative dimension of the research, the "Speaking Skills Attitude Scale" developed by Topçuoğlu-Ünal and Özer (2017) was used to measure students' speaking skills. The KMO value of the Speaking Skills Attitude Scale is .816. This value is between 0.80 and 0.90, which allows the obtained value to be interpreted as perfect. The applied scale has 27 items and 2 sub-dimensions. It is a 5-point Likert type scale. 20 of the items contain positive judgments and 7 contain negative judgments. An internal consistency study was conducted to determine the reliability of the scale and the Cronbach Alpha Internal Consistency coefficient of the scale was found to be .812. The internal consistency coefficients of the scale were measured as .865 for the "Interest and Love for Speaking Skills" dimension and .730 for the "Anxiety for Speaking Skills" dimension. In this context, it is possible to say that the items in the scale are consistent with each other and reflect the attitude intended to be measured.

Qualitative Data Collection Tools
The qualitative data collection tools of the research consist of observation, interview and documents. Diversification was made in the research using observation, interviews and documents. Using multiple data collection tools in qualitative research is a frequently used way to collect more accurate data on the determined topic and to increase the validity and reliability of the data (Maxwell, 2018).

Observation
The first of the qualitative data collection tools used in the research is observation. Observation is used as a direct and powerful way to learn about people's behaviors and the context in which they occur (Maxwell, 2018). While observing, vision and hearing are used to collect information about the specified event. During the observation, the researcher can examine the physical environment, the emotional and physical state of the participant, and the interaction of the participants and take notes (Çelebi & Orman, 2021). In this research, observation was made using a structured observation form in two separate time periods. While preparing the observation form, speaking achievements in the curriculum of the Ministry of National Education (2018) and observation form items in the Speaking Skills Attitude Scale (2017) were used. After the interview form was prepared, it was sent to three different Turkish education experts and as a result of the feedback, the observation form was given its final form (ANNEX-3). Before the application, the students in the study group were given the "Donkey in the Well" story text, prepared by the researcher after taking the expert opinions of two academicians and a Turkish teacher, and they were asked to tell the stories. Participants took turns telling the stories in front of the camera in a quiet room. Each student's narrative was recorded separately by the researcher. 4 students who were not at school on the day the stories were told did not participate in the storytelling activity. The story prepared by the researcher was told to the students again 8 weeks after the applications were completed. Participants took turns retelling the stories in a classroom with the researcher present. In the second narration, the stories were recorded and later analyzed through the observation form prepared by the researcher.

Semi-Structured Interview
The second qualitative data collection tool in the research is semi-structured interview. Interviewing is used to learn about unobservable behaviors, emotions, or how people express the world around them. Semi-structured interviews help to open the subject with different questions during the conversation process, examine it from various angles, and reach new ideas about the subject (Merriam, 2018). In this research, participants were interviewed in order to examine the data obtained from their documents and observation notes from various perspectives and to reveal different issues than those stated in the documents. While preparing the interview questions, the speaking achievements in the curriculum of the Ministry of National Education (2018) and the Speaking Skills Attitude Scale (2017) were used. After the interview questions were prepared, they were sent to three different Turkish education experts and after the feedback, the semi-structured interview form was finalized and interviews were conducted (ANNEX-2).

Data Collection Process
This section contains information about the data collection process and application process. The implementation process of the research was carried out by the researcher and lasted 8 weeks. Each drama workshop lasted approximately 2 hours (120 minutes). Detailed information about the content of the workshops, their timing and the times when data collection tools were used are given in Table 4:

Table 4.

Application process of the research

Date	Time	Content
18.11.2021	10:00-12:00	Meeting / program information / pre-test application
21.11.2021	10:00-12:00	Telling first stories for observation
22.11.2021	10:00-12:00	Drama workshop / diary collection
30.11.2021	10:00-12:00	Drama workshop / diary collection
07.12.2021	10:00-12:00	Drama workshop / diary collection
14.12.2021	10:00-12:00	Drama workshop / diary collection
21.12.2021	10:00-12:00	Drama workshop / diary collection
28.12.2021	10:00-12:00	Drama workshop / diary collection
04.01.2022	10:00-12:00	Drama workshop / diary collection
11.01.2022	10:00-12:00	Drama workshop / diary collection
12.01.2022	10:00-12:00	General evaluation/post-test application
13.01.2022	10:00-12:00	Telling last stories for observation
14.01.2022	10:00-12:00	Conducting interviews
05.04.2022	10:00-12:00	Performing a permanence test

Collection of Quantitative Data

In this study, the Speaking Skills Attitude Scale developed by Topçuoğlu-Ünal and Özer (2017) was used as a quantitative data collection tool. For the implementation of the scale in question, an ethics committee was taken by the Fırat University Social Sciences and Humanities Research Board with the date of 25.12.2020, meeting number 27 and decision number 7. The scale was applied to 7th grade students at Hayriye Başdemir Secondary School in Battalgazi District of Malatya Province. During the application, the researcher was in the same environment with the students and made explanations about the scale. First of all, the scale was applied as a permanence test before the semi-experimental application, which was based on the voluntariness of the students, after the application and 2 months after the end of the application.

Collection of Qualitative Data

The qualitative data of the research are of two types: observation and interview. Each of the qualitative data was collected by the researcher at separate time periods. In the research, observation data was first collected. After the pre-test, data was collected for observation by having the participants tell stories before starting the application. Observation data were collected from each student separately before and after the application. In order to examine the observation data more accurately, camera recording was taken while the participants were telling their stories. The duration of participants telling their stories varied between 1-2 minutes. The same story was told by the students before and after the application and recorded by the researcher.

The interview, which is the secondary data collection tool of the research, was conducted after the applications were completed. Nine students who participated in the interview were interviewed in turn, and the interviews were recorded with a camera and voice recorder. Interviews with participants varied between 10-20 minutes. The interviews were recorded digitally to prevent data loss.

Analysis of Data

In this section, explanations are made about the analysis of quantitative and qualitative data.

Analysis of Quantitative Data

A computer package program was used to analyze the data obtained by applying the "Speaking Skills Attitude Scale". In all analyzes performed in the computer package program, the significance level was accepted as $p<.05$.

Normality assumptions were checked to determine the test types to be used in terms of pre-application, post-application and permanence application regarding the sub-dimensions of the "Speaking Skills Attitude Scale". For this purpose, whether the data regarding the sub-dimensions of the scales showed a normal distribution was examined with skewness and kurtosis coefficients. In the current study, it was determined whether the groups showed normal distribution. Skewness and Kurtosis values were checked for normality test. It is accepted that there is a normal distribution when Kurtosis and Skewness values are -1.00 to +1.00 (Tabachnick and Fidell, 2013; cited in Erbay and Beydoğan, 2017). In the context of this criterion, since the kurtosis and skewness values of the data in the sub-dimensions of the pre-test, post-test and permanence applications of the "Speaking

Skills Attitude Scale" are greater than -1.00 and +1.00, the analyzes were performed non-parametrically, the tests "Mann Whitney U and Wilcoxon Signed Rank Test" were used.

Analysis of Qualitative Data

In order to analyze the qualitative data of the research, transcripts of the student interviews were made. The data obtained from student diaries and interviews were subjected to content analysis in order to be processed more deeply and to discover concepts and themes that were not noticed with a descriptive approach. Content analysis aims to describe the data and reveal the facts that may be hidden in the data (Yıldırım & Şimşek, 2008). Descriptive analysis was preferred for the observation data of the research. In descriptive analysis, the data obtained in the research are interpreted according to predetermined themes (Yıldırım & Şimşek, 2008). In the study, the transcribed interview data were transferred to the Word program and analysis was started after the students' approval was obtained. The approved data were divided into codes, categories and themes by the thesis advisor and the researcher. Codes, categories and themes were classified taking into account their similarities and differences and presented in tables. The data obtained from the interview were analyzed under the theme of speaking as categories of future goals for speaking skill, in-class speaking skill, out-of-class speaking skill, body language and speaking skill. The analyzes were presented in tables and a (+) sign was placed under the code name to indicate that the participants expressed their opinions about the relevant code.

Validity and Reliability

In this section, information about the validity and reliability of qualitative and quantitative data is given.

Validity and Reliability for Quantitative Data

Validity and reliability data regarding quantitative data are summarized in the table below.

Table 5.

Reliability coefficient table

			Cronbach's alpha
Control	Pre-test	Interest and Love	0,821
		Anxiety	0,730
	Post-test	Interest and Love	0,885
		Anxiety	0,799
Experimental	Pre-test	Interest and Love	0,833
		Anxiety	0,642
	Post-test	Interest and Love	0,880
		Anxiety	0,880
Permanence	Permanence Test	Interest and Love	0,707
		Anxiety	0,880

Looking at the table above, it is seen that the lowest value of the reliability coefficient is 0.645 and the highest value is 0.88. When these values are examined, it is concluded that the scale is reliable in the context of the data obtained as a result of the application.

Validity and Reliability for Qualitative Data

In qualitative research, an answer is sought to the question of whether our interpretations of the findings obtained in the research reflect the truth in internal validity (Yıldırım & Şimşek, 2008). Whether the data obtained in the study is compatible with the current reality is related to whether the data reflects the truth (Merriam, 2018). The measures taken to increase the internal validity, i.e. credibility, of the study are explained in detail in the data collection section. The data obtained from the participants were sent to the participants and confirmed, and the transcribed texts were analyzed after participant approval. The answers obtained from the participants' interviews and diaries are given directly in the findings section. An environment of trust was created to reassure the participants before the interviews, and a conversation atmosphere was created with the participants before the interviews started. In the research, method diversification was made and quantitative and qualitative methods were used together. Additionally, it was aimed to increase internal validity by using interviews, observations and diaries as qualitative data collection tools. The researcher frequently consulted expert opinions from the moment they created the data collection tools to the time they wrote the results discussion section. As a result of the measures taken, it was aimed to increase internal validity.

External validity relates to the generalizability of research results. If the research results can be generalized to similar environments and situations, that is, can be transferred, it can be said to have external validity (Merriam, 2018). In order to increase external validity, the research design, study group, data collection tools, application process, analysis of the data obtained, how the findings are organized and the role of the researchers are explained in detail in the relevant sections.

In order to increase the internal reliability, that is, the consistency, of the research, the data obtained from the interviews, diaries and observations were coded separately by two separate researchers, and the codes and categories were matched and revised. It was then presented to three Turkish education experts to check the consistency of the codes related to the categories, and the feedback was given to ensure internal reliability by reaching a consensus among the researchers.

In order to increase the external reliability of the research, the research data were discussed appropriately in the results section. Whether the results and findings section provides consistency was discussed among the researchers and a consensus was reached. A qualitative research expert confirmed whether the results discussion section and the findings section were consistent.

Findings and Comments

Findings and Comments on Quantitative Data

Findings and comments regarding the first hypothesis

Hypothesis 1: There is a significant difference between pre-application and post- application in the control group.

Regarding this hypothesis, the findings obtained as a result of the Wilcoxon Signed-Rank Test, which was conducted to determine the difference between the pre-attitude and post-attitude score averages of the students in the control group, are given in the table below.

Table 6.

Wilcoxon Signed-Rank Test results between pre-application and post-application in the control group

	Application	Mean	SS		N	Mean Rank	Sum of ranks	z	p
	Pre	70,71	9,23	Negative rank	13	13,85	180,00	-0,216	,829
Interest and love	Post	70,75	13,72	Positive rank	14	14,14	198,00		
				Equal	1				
	Pre	18,57	5,25	Negative rank	9	9,22	83,00	-1,415	,157
Anxiety	Post	20,17	6,15	Positive rank	13	13,08	170,00		
				Equal	6				

When the table in question was examined, differences were observed between the score averages between the pre-application and the post-application in the interest and love sub-dimension ($\bar{x}_{pre}$ =70,71; $\bar{x}_{post}$ =70,75). According to the results of the Wilcoxon signed-rank test, which was performed to determine whether the observed differences in the mean scores between the pre-application and the post-application in the control group were significant, the Z value in the interest and love sub-dimension was -0.216. (p>0,05). Therefore, the differences between the average scores of the pre-application and post-application scores in the control group in the interest and love sub-dimension are meaningless. When we look at the averages, although there is an increase from 70.71 to 70.75 between the pre-application and the final application, this numerical increase can be interpreted as no change in the interest and love for speaking skills in the control group.

Differences were observed between the mean scores in the anxiety subscales ($\bar{x}_{pre}$ =18,57; $\bar{x}_{post}$ =20,17). According to the results of the Wilcoxon signed-rank test, this difference was not significant. (Z=-1.415; p>0,05). It was observed that the difference in the mean scores in anxiety was not significant, but while the mean of the pre-application was 18.57, the mean of the post-application was 20.17. Students' anxiety about their speaking skills have increased. The increase in these differences is not significant enough. In this context, it can be interpreted that there is no change in anxiety regarding speaking skills in the control group.

Findings and comments regarding the second hypothesis

Hypothesis 2: There is a significant difference between pre-application and post-application in the experimental group.

The results of the Wilcoxon Signed-Rank Test, which was conducted to determine whether there was a significant difference between the pre-application and the post-application in the experimental group, are summarized in the table below.

Table 7.

Wilcoxon Signed Rank Test results between pre-application and post-application for the experimental group

	Application	Mean	SS		N	Mean Rank	Sum of ranks	z	p
Interest and love	Pre	71,00	12,23	Negative rank	2	2,75	5,50	-4,410	,000
	Post	86,85	6,73	Positive rank	25	14,90	372,50		
				Equal	0				
Anxiety	Pre	20,62	5,60	Negative rank	25	13,62	340,50	-4,195	,000
	Post	12,11	4,99	Positive rank	1	10,50	10,50		
				Equal	1				

When the table in question was examined, differences were observed between the score averages between the pre-application and the post-application in the interest and love sub-dimension. ($\bar{x}_{pre}$ =71,00; $\bar{x}_{post}$ =86,85). According to the results of the Wilcoxon signed-rank test, which was performed to determine whether the observed differences in the mean scores between the pre-application and the post-application in the experimental group were significant, the z value in the interest and love sub-dimension was -4.410 ($p<0,05$). Therefore, the differences between the averages of the pre-application and post-application scores in the experimental group in the interest and love sub-dimension are significant. When we look at the averages, it was seen that there was an increase from 71.00 to 86.85 between the pre-application and the post application. Interest and love increased in the experimental group. In the research, body language-centered drama activities applied to the students in the experimental group resulted in a significant increase in the students' attitudes towards their interest and love in speaking skills. In this context, it can be said that body language-centered drama activities are effective in creating positive attitudes in students.

Differences were observed between the mean scores in the anxiety subscales ($\bar{x}_{pre}$ =20,62; $\bar{x}_{post}$ =12,11). According to the results of the Wilcoxon signed-rank test, this difference was significant ($Z=-4,195$; $p<0,05$). The difference in mean scores in anxiety was found to be significant. Students' anxiety and concern about speaking skills have decreased. In this context, with body language-centered drama activities, students' anxieties about their attitudes towards speaking skills were clearly and significantly reduced.

Findings and comments regarding the third hypothesis
Hypothesis 3: In the last application, there is a significant difference between the control group and the experimental group.
The Mann Whitney U Test results, which were performed to determine whether there were significant differences between the control group and the experimental group in the final application, are summarized in the table below.

Table 8.

Mann Whitney U Test results between the control group and the experimental group in the post application

	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	p
Interest and love	Control	28	18,16	508,50	102,500	-4,644	,000
	Experimental	27	38,20	1031,50			
Anxiety	Control	28	37,30	1044,50	117,500	-4,401	,000
	Experimental	27	18,35	495,50			

When the table above is examined, in the post application, differences were observed in the mean ranks of the control group and the experimental group in the interest and love sub-dimension ($\bar{x}_{control}$ =18,16; $\bar{x}_{experimental}$ =38,20) and according to the results of Mann Whitney U Test to determine whether these differences are significant or not ($Z=-4.401$; $p<0.05$), this difference was found to be significant. Considering the average of the ranks, it was seen that the experimental group's interest and love for speaking skills increased significantly and clearly compared to the control group. In the light of this information, it was observed that the Turkish lesson

taught with body language-centered drama activities increased the students' attitudes of interest and love towards speaking skills compared to the regular Turkish lesson.

Differences were observed between the mean ranks in the anxiety sub-dimensions. ($\bar{x}_{control}$ =37,30; $\bar{x}_{experimental}$ =18,35). According to the results of the Mann Whitney U test, which was performed to determine whether these differences are significant or not, this difference was statistically significant (Z= -4,401; p<0,05). When the mean ranks are examined, it is seen that the anxiety of the experimental group is much lower than the control group. In other words, it can be said that body language-centered drama activities significantly reduce students' anxiety and concerns about speaking skills.

Findings and comments regarding the fourth hypothesis

Hypothesis 4: There is a significant difference between the post application and the permanence application in the experimental group.

The results of the Wilcoxon Signed-Ranks Test, which was conducted to determine whether there was a significant difference between the post application and the permanence application in the experimental group, are summarized in the table below.

Table 9.

Wilcoxon Signed-Rank Test results between the post application and the permanence application in the experimental group

	Application	N	Mean	SS		N	Mean rank	Sum of ranks	z	p
	Post	27	86,85	6,73	Negative rank	9	7,83	70,50		
Interest and love	Permanence	27	86,62	6,10	Positive rank	5	6,90	34,50	-1,182	,237
					Equal	13				
	Post	27	12,11	4,99	Negative rank	3	12,00	36,00		
Anxiety	Permanence	27	12,03	3,35	Positive rank	10	5,50	55,00	-,672	,501
					Equal	14				

When Table 9 is examined, differences were observed in the mean scores of the post application and the permanence application. ($\bar{x}_{post\ application\ interest\ and\ love}$ =86,85; $\bar{x}_{permanence\ interest\ and\ love}$ =86,62; $\bar{x}_{post\ application\ anxiety}$ =12,11; $\bar{x}_{permanence\ anxiety}$ =12,03). According to the results of the Wilcoxon Signed-Rank Test, these differences were not significant. ($Z_{interest\ and\ love}$ = -1,182; p>0,05; $Z_{anxiety}$ =-0,672; p>0,05). It was observed that student attitudes towards speaking skills did not change 2 months after the semi-experimental procedure was completed. In other words, it can be interpreted that the success achieved in the increased interest and love in speaking skills of body language-centered drama activities applied to seventh grade students in Turkish lessons continues, and the decrease in their anxiety is permanent. It is clear that body language-centered drama activities have a positive effect on speaking skills. Teaching by doing and experiencing, due to the nature of drama, ensured the permanence of students' gains in speaking skills.

Findings Obtained Regarding Qualitative Data

In the qualitative dimension of the study, in order to answer the sub-problem "What are the students' opinions in the Turkish course where the effect of body language-centered drama activities on students' speaking skills in secondary school Turkish teaching is applied?", after 12 sessions, 24 hours of practice, drama diaries and interviews filled out by 23 students at the end of each session and the data obtained from the interviews of 9 students were evaluated and interpreted.

Findings from the Interview

A structured interview was used to determine the opinions of the students who participated in the research about the creative drama method at the end of the applications. The findings obtained from the interview were examined in this section under the theme of speaking skills, through the categories of speaking skills, in-class speaking skills, out-of-class speaking skills, body language and future goals for speaking skills.

Findings Regarding the Speaking Skills Category

Table 10.

Participant opinions regarding the speaking skill category

Codes	f	Aslı	Ahmet	Lina	Murat	Merve	Metin	Tomris	Göktuğ	Esin
Improving speaking skills	9	+	+	+	+	+	+	+	+	+
Gaining self-confidence in speaking	7	+	+			+	+	+	+	+
Gaining expression skills	6		+	+	+		+		+	+
Improving sentence making	5		+	+	+		+		+	
Being able to speak in public	3			+			+		+	
Correcting oral use	2				+	+				
Fixing stuttering problem	1	+								
Improving impromptu speaking skills	1							+		
Learning new words	1								+	
Understanding others	1					+				

When Table 10 is examined, all participants stated that drama practices improved their speaking skills. While Murat, one of the participants who stated that his speech was more fluent and smooth, said his thoughts on this subject: "Uh, but I started speaking better. I mean, normally I wasn't ashamed, it's just that it's beautiful... I couldn't pronounce it, but now I can pronounce it better, let me put it that way.", Göktuğ stated that using gestures improved his speech by expressing as follows: "For example, erm, for a few days, before I started this drama, I could not communicate properly with my friends, so I was hanging out when asking sentences, but now I am more comfortable and I can be more clear and concise when I use my hands and arms.". While Lina, one of the participants, stated that body language-centered drama practices gave her self-confidence in speaking and that she was able to speak without fear, adding her thoughts as follows: "For example, before, I was very nervous when speaking. There was a fear that I would make a mistake or be disgraced, but now there is no such fear, so I can speak more freely. …As I said, I overcame my fears and I want to go even further.", one of the participants, Esin, said: "Well, now we talk in drama activities, we use our body language, and I think this is very useful for my speaking skills. Well, I don't hesitate to talk as much as I used to. For example, erm, I used to be so hesitant to say something to my mother, but now I say everything freely. When I speak, I never accept the things I wonder if I said something wrong. I used to be very excited, but now I'm not that excited because we already have a very friendly environment in the classroom and I feel like I have to be like that everywhere. That's why you contributed as much as possible.". While Lina, one of the participants who stated that the practices provided gains in self-expression while speaking, said: "...for example, some of my friends might not understand what I was telling erm, before the drama activity. After the drama activity, I can explain what I want to say better and the other people can understand it better. Also, when I talk, my friends can immediately understand what is happening and give a different answer.", Ahmet expressed his thoughts as follows: "Um, sir, mmm… What did it bring to me? It has increased erm, my speaking ability and ability to construct proper things. I even saw it.". Göktuğ, one of the participants who stated that body language-centered creative drama practices improved their ability to form sentences, said: "For example, when I am going to explain something, I stand like this, thinking about how to express it, but now I can construct my sentences better.". While Metin, one of the participants who stated that his public speaking skills improved after creative drama practices, said: "I was doing a math project hmm, the other year. Mmm, I still laughed at my project, I wasn't comfortable. I did my social project, this time I felt comfortable, talked and explained. So I didn't hesitate like that. I spoke by looking at everyone, looking into their eyes.", Linai stating that she overcame her stage fright, said: "I was afraid when I went erm, on stage, and thanks to this process erm, I overcame it and I am not afraid anymore hmm, and also, I do not get excited when I go on stage.". Murat, one of the participants who used dialect in his speech but stated that he corrected this after body language-centered creative drama practices, said: "While I used to speak with a Malatya accent, now I speak with standard Turkish. For example, when talking to the teacher, sometimes we say it in the Malatya dialect, for example, with the gym teacher, for example, in football, we say "diving" in the neighborhood dialect, but we use it as defense now, it works in that sense.". Aslı, one of the participants who stated that she had a stuttering problem before the body language-based creative drama workshops, but that this problem decreased afterwards, expressed her opinion as follows: "Uh... What it has given me (extends) is that I don't stutter. Because uh, my stuttering is uh going away. And it passed, erm, which made me happy. For example, when I read something, I would stutter every minute. After that… I mean, how should I say it, I mean, in the meantime, I noticed that it had decreased like this. I said, maybe my stutter won't go away. I was always this sad. Some time, erm, I read an audio book. After that, I realized that, uh, my stuttering erm, is go-going away (stutters). I felt happy after that. That's it." Stating that she was able to make

impromptu speeches after body language-based creative drama workshops, Tomris expressed her opinion as follows: "During a sudden conversation, thanks to this drama, I can, erm, how should I put it ... make a good speech." Metin, one of the participants who stated that he understood others better in speech thanks to body language-centered drama practices, said: "When I improvised, I understood what I improvised better, and then what other people wanted to understand. I realized how difficult the body language of those who cannot speak is."

Findings Regarding the Classroom Speaking Skill Category

Table 11.

Participant opinions regarding the classroom speaking skill category

Codes	f	Aslı	Ahmet	Lina	Murat	Merve	Metin	Tomris	Göktuğ	Esin
Feeling comfortable	7	+	+	+			+	+	+	+
Increasing class participation	7	+	+	+	+	+	+		+	
Taking the teacher as a role model	7	+	+	+	+		+	+		+
Improving peer communication	6		+	+	+		+	+	+	
Contributing to communication with teachers	4		+	+					+	+

When Table 11 is examined, while Esin, one of the participants who stated that she expressed herself more easily in the classroom after the body language-based drama practices, said: "So, now we are all one in the classroom, hmm so we know. Well, when we talk about something, everyone understands me, I think, because we got used to each other in the classroom. Then, when I say something, for example, we can laugh, and when I say something funny, everyone understands it easily. I think I expressed myself well, too. That's why it occurs to me that I can be like this in any environment. So, whenever there is sincerity, I become more comfortable thanks to these drama activities.", Ahmet expressed his opinion as follows: "For example, the teacher asked me a question. I was asking that question with hesitation before drama class. Well, now, after drama class, I said it without hesitation. I say it comfortably.". While Göktuğ, one of the participants who stated that drama practices made it easier for them to participate in other courses, said: "Um, this usually happens when the teacher is asking questions, sometimes directly, for example, even if I don't raise my hand, he will raise me, that is, he would do such things. I was always afraid of what to say, but now I have more knowledge about them... I attend classes more now. Normally I was standing still, but now I raise my hand to every question the teacher asks. I already knew, but I never raised my hand, I was ashamed, now I can speak better and I'm not ashamed at all.", Lina said, "Well, for example, hmm, sometimes before the drama activity, I wasn't sure about the question I was asking. So I wasn't sure if the answer was correct or not. That's why I didn't want to say it to myself, I didn't say it, but now that I've said it, I can express myself more and participate more." While Esin, one of the participants who stated that the creative drama instructor takes body movements as a role model and uses them in the classroom, said: "Well, for example, when you do it, I like it too, because the movements you make are very beautiful and your body language has such sweet shapes. That's when I feel like I can do it too, why not? Then I try to do it myself, sometimes in class. I think what you do becomes a target for many of your friends.", Murat, one of the participants, said: "You showed us your body language as an example. "We took this example and used better body language.". While Göktuğ, one of the participants who stated that body language-based drama practices contributed to his conversations with his peers, said: "So, I learned that the things I told my friends would be more clear and understood better, and then hmm, I learned what would happen if I did not use body language, and what I would be faced with by society if I used my body language.", Murat expressed his thoughts as follows: "For example, erm, when I was talking to my friends, sometimes when I was talking to Ege, especially Ege, they would understand it as nonsense because I spoke in a Malatya dialect, but now they understand it as normal because I speak more effectively." While Esin, one of the participants, stated that she could talk more comfortably to other teachers after the practices and said, "For example, when I was talking to the teacher or making a comment about a subject, I realized that I could express everything with my body language. So it's actually an effective thing.", Lina stated, "... Before doing drama, for example, when I was explaining something to my teacher, erm, I did not use body language, and thanks to drama, erm, now, erm, I can explain it more easily and use body language.".

Findings Regarding the Out-of-Class Speaking Skill Category

Table 22.

Participant opinions regarding the category of speaking skills outside the classroom

Codes	f	Aslı	Ahmet	Lina	Murat	Merve	Metin	Tomris	Göktuğ	Esin
Being able to talk to foreign people	5				+	+	+	+		+
Using it in family environment	5	+	+		+		+			+
Being appreciated by others	2					+				+

When Table 12 is examined; while Metin, one of the participants who stated that he could talk to strangers more easily after body language-based drama activities, said: "There is a man in the neighborhood opposite us who is disabled, he goes to the market every morning and buys bread, but he cannot speak. I didn't understand his body language, he had an errand once, he asked me something. It finally came to my mind. For example, he asked "Is there free bread?" and I understood with his body language. And I told him there was.", Esin expressed his opinion as follows: "Well, now, I will learn repair work with my father during the semester break, as a development, in order to get started in life. My father is a telephone repairman. Well, now he has a lot of customers, on a daily basis. Of course, treating customers well makes us more profitable. That's why I collected these drama activities and all the things to use in my daily life. "I plan to use it against customers because my father also said, of course, it is good to socialize with customers, socialize with people, even if you have experience in this, it is better." Merve said: "Well, for example, in the past, when I went to the market, I could not say good luck. I mean, I couldn't say 'have a good day' or anything like that, but now I've gotten used to it so much that I can say it clearly.". While Ahmet, one of the participants who stated that he used body language more easily in the family environment after the creative drama practices, said: "Sometimes with my friends, hmm, I have a cousin, for example, we talk with my cousin with body language like that, with hand and arm gestures. I am happy with him, and we try to improve ourselves by doing things like this... Erm, we try to increase body language.", Metin said, "I use my body language after dramas. For example, when we play with my brother at night, we make something out of the shadow and I guess. ... As in the previous example, for example, we play games with my brother and when we are bored, we do things related to body language and explain them to each other. For example, it is like charades, but with body language…". Merve, one of the participants who stated that the development in her speaking skills was appreciated by her family, said: "For example, my mother says; "Your speaking has improved a lot and you speak very well.".

Findings Regarding the Body Language Category

Table 3.

Participant opinions regarding the body language category

Codes	f	Aslı	Ahmet	Lina	Murat	Merve	Metin	Tomris	Göktuğ	Esin
Increasing usage	9	+	+	+	+	+	+	+	+	+
Using gesture	5		+	+	+			+	+	
Using it when explaining a case study	4		+		+	+			+	
Understanding the importance of body language	4			+	+		+			+
Increasing eye contact	2	+					+			
Being able to express emotions	1							+		

When Table 13 is examined, While Esin, one of the participants who stated that body language-centered drama practices increase the use of body language, said: "Well, now we talk in drama activities, we use our body language, and I think this is very useful for my speaking skills.", Ahmet said, "It has increased a lot now. Now, talking to my mother like this at home has increased a lot. It increased while talking to Efe." While Lina, one of the participants who stated that she used her gestures more effectively after the creative drama practices, expressed her thoughts as follows: "For example, erm, when we explain in our homework, erm, I make gestures, yes, for example, I indicate when I am happy (showing with her body)", while Göktuğ said, "For example, we

will go somewhere with my friends, but I say my right side, but it doesn't work for him... I normally never used my arm, but now I use it more. They can understand it when I show them and they can understand it better when I tell them which side it is". While Merve, one of the participants who stated that she increased her use of body language when telling a case study after body language-based drama practices, said, "I use it now (meaning body language). Erm, I can now use it when explaining something, for example, an event. In life, for example, erm, I used it effectively while giving a speech or telling a story.", Murat, one of the participants, said: "In life, for example, erm, I used it effectively when giving a speech or telling a story... Erm, I have a little brother, my younger brother, it is more enjoyable when I use body language like this when telling stories to him.". While Murat, one of the participants who realized the importance of using body language after the body language-based drama practices, said: "We realized that body language is actually the most important part of speaking. We realized that when we use body language, our listeners or friends understand us better. Learning and applying this made me feel better,", Esin said, "I cannot express some things by speaking. We can show, we can use our body language, in fact, I think body language is something that all people should learn... We express some things with our body language because, as I said, we may not be able to fully express some things by speaking.". Metin, one of the participants who stated that they were able to make eye contact in their conversations after the creative drama practices said, "When I express myself to someone, eye contact... Normally, I would never make it." Now (he extends it), I am making it.". Tomris, who thinks that she can express her emotions better by using body language, says her thoughts on this subject: "I learned to express my emotions better with my body language.".

Findings Regarding the Future Goals Category for Speaking Skills

Table 14.

Participant opinions regarding the category of future goals for speaking skills

Codes	F	Aslı	Ahmet	Lina	Murat	Merve	Metin	Tomris	Göktuğ	Esin
Desire to take the stage	5	+		+		+	+		+	
Developing a desire to teach others	4	+		+					+	+

When Table 14 is examined, Metin, one of the participants who stated that they wanted to take the stage outside of school after body language-centered drama activities, said: "In my dreams, I would like to make a scene like this with body language on a big theater stage and play like theatre. Do it like shadow play. Making Hacivat Karagöz sounds.". While Göktuğ, one of the participants who stated that they wanted to teach the skills they learned in creative drama practices to others, said: "I am thinking of choosing this profession as well. Hmm, I liked it very much, I loved it very much, so I want it to be my profession. I don't have any other thoughts on that subject, so it could be my profession. I also want to teach others. Until you taught me (meaning body language) I thought why I was missing something like this. Let me teach others so that they don't miss out.", Esin said, "Yes, now you have come before me as a profession. So, when I grow up in the future, I plan to do a job like you. I am thinking of creating such a group, that is, with children, especially young people, and doing the same activities as you do.".

Findings Obtained from the Observation Form

In this section, the speaking skills of the students who participated in the research were examined in the stories they told before and after the applications. As a result of the review, the preliminary speech and the post speech were analyzed and the findings were included.

Findings Obtained for All Participants

Graph 1.

Total Speaking Skill Development Chart
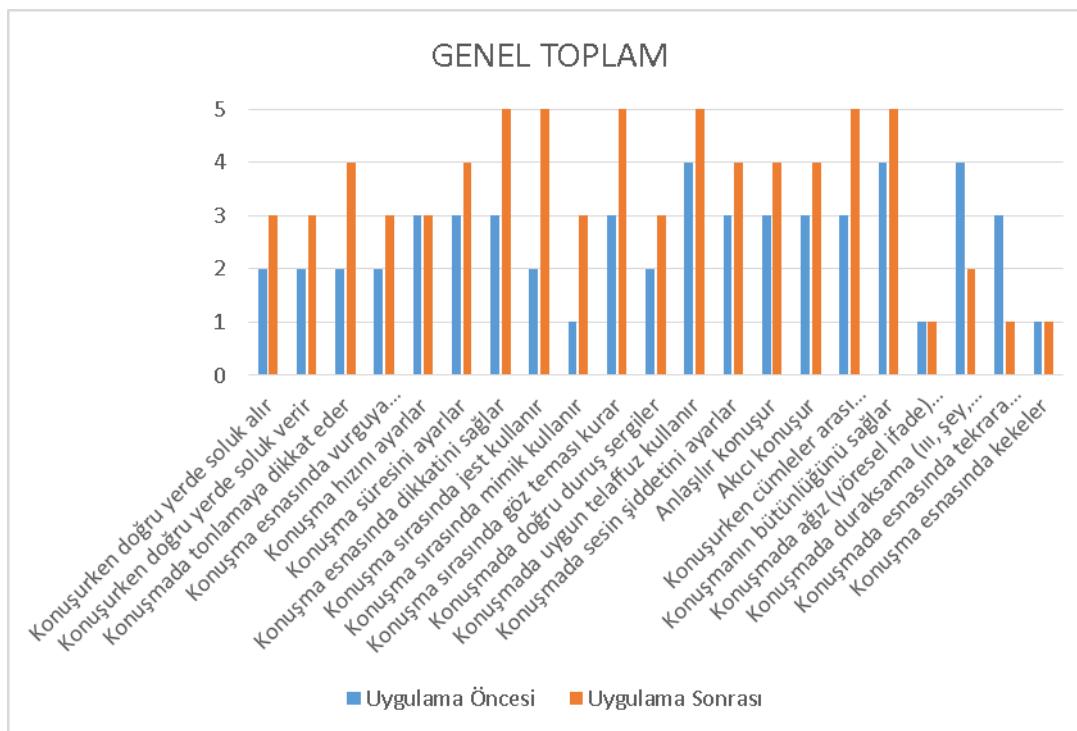
The graph shows the findings regarding the speaking skills of all participants. The participants' *inhales in the right place while speaking* score was 2 before the application, but it was measured as 3 after the application. The score of *exhales in the right place while speaking* was 2 before the application and 3 after the application. While the score of *pays attention to intonation in speech* was 2 before the application, it increased to 4 after the application. The score of *pays attention to stress while speaking* was measured as 2 before the application and 3 after the application. The *speech rate adjustment* score was 3 both before and after the application. *Sets the talking time* was measured as 3 before the application and 4 after the application. The score for *ensuring attention during speaking* was 3 before the application and 5 after the application. While the score for *using gestures while speaking* was 2 before the application, it increased to 5 after the application. While the score for *using facial expressions while speaking* was 1 before the application, it was measured as 3 after the application. The score of *making eye contact while speaking* was measured as 3 before the application and 5 after the application. While the score of *exhibiting correct posture* in speaking was 2 before the application, it increased to 3 after the application. The score of *using appropriate pronunciation in speaking* was measured as 4 before the application and 5 after the application. While the score for *adjusting the volume of the voice in speech* was 3 before the application, it became 4 after the application. While the score for *understandable speaking* was 3 before the application, it was measured as 4 after the application. The score for *fluent speaking* was 3 before the application and 4 after the application. The score of *establishing semantic connections between sentences while speaking* was measured as 3 before the application and 5 after the application. The score of *ensuring the integrity of speech* was measured as 4 before the application and 5 after the application. *The use of dialect* score in speaking was measured as 1 before and after the application. While the score of *hesitates in speech* was 4 before the application, it was measured as 2 after the application. While the score for *repetition during speaking* was 3 before the application, it decreased to 1 after the application. The score for *stuttering during speaking* was measured as 1 before the application and again as 1 after the application. Looking at Graph 23, it was seen that body language-centered creative drama activities had a positive effect on all participants. Looking at the table, it can be said that the students made positive progress in speaking skills in the Turkish course taught with body language-centered drama activities.

Conclusion, Discussion and Recommendations

Examination of the results obtained from qualitative and quantitative data in line with the method and design chosen in the research was carried out under separate headings in this section. The results of each scale tool applied to qualitative and quantitative data are also expressed separately. In this section, the qualitative and quantitative findings obtained in the research and the sub-problems of the research are discussed, taking into account the relevant literature.

Results and Discussion on Quantitative Data

As a result of the statistical analysis, love and interest and anxiety sub-dimensions were examined.

Results and Discussion Regarding the Love and Interest Sub-Dimension

While no significant difference was observed in the pre-application and post-application in the control group in the love and interest sub-dimension, a positive change was observed in the attitudes of the students in the experimental group towards speaking skills at the end of the process. With this result showing that body language-centered drama activities in the experimental group increased students' love and interest in speaking skills, it can be said that there will be a positive change in students when the right method is chosen. The lack of change in the control group can be considered as an indication that there should be practice-based activities in the MEB Turkish program that will allow students to learn by doing and experiencing. In this way, the quality of communication skills can be increased by encouraging students to be active, and their motivation for speaking can be increased by using games combined with a communicative approach (Dewi, Kultsum, & Armadi, 2017). At the same time, it liberates students to speak on behalf of the character they play, rather than speaking as themselves in drama activities. This aspect of drama makes drama superior to other methods that bore the child and distract him from the lesson (Kara, 2007) and increases students' interest and love for the lesson.

Results and Discussion Regarding the Anxiety Sub-Dimension

Another sub-dimension, anxiety, while there was no significant difference in the control group, it was observed that anxiety in speaking skills decreased in the experimental group. The anxiety that occurs at the beginning may be due to factors such as students' perspectives on drama activities and their hesitation about the roles they assume in the role-play process. Every student who is not given sufficient opportunity to speak and who does not feel himself/herself in the process has difficulty in sharing his/her thoughts with the society, and this reveals the anxiety that manifests itself in speech (Bozpolat, 2017). Drama has an important place in developing effective speaking skills by relieving speaking anxieties (Aykaç and Çetinkaya, 2013, p.675). Ahmed (2019) shows in his study that applying a drama-based program in acquiring English speaking skills reduces students' speaking anxiety. Supporting the results, the study by Dewi, Kultsum and Armadi (2016) shows that communicative games have a positive effect on the development of speaking skills and reduce distress and anxiety in the educational environment. The study data reveal that students' existing anxiety decreases and they feel less anxiety while speaking in the course where body language-centered drama activities are used, compared to the normal Turkish course. Similarly, Kardaş and Akın (2019) found that drama activities reduced speaking skill anxiety. In this regard, various studies (Kardaş & Koç, 2017; Kardaş, 2016a) concluding that drama reduces speech anxiety also support this result.

Conclusion and Discussion Regarding the Permanence Effect

After the test applied to see whether the change in the experimental group was permanent or not, it was seen that the success achieved in the increased interest and love of body language-centered drama activities in speaking skills in the Turkish lesson continued, and the decrease in anxiety was also permanent. Baldwin (2020, p. 5) also mentions in his study that children establish a real emotional bond with the subject and other events while acting, and that the connection between this bond and drama makes learning permanent. Maden and Dinç (2017), who studied drama in Turkish teaching, also concluded that drama positively affects permanence. Similarly, there are many studies (Gürbüz and Ilgaz, 2021; Öztürk and Sarı, 2018; Sarı, 2017; Gümüş, 2017; Aksüt, 2016; Durusoy, 2012; Güven, 2012; Arıkan, 2011) that concluded that the drama method is effective on permanence.

Conclusion and Discussion on Qualitative Data

Interviews, drama diaries and observation forms were used to obtain findings regarding qualitative data.

Conclusion and Discussion on the Findings from the Interview

Conclusion and Discussion Regarding Speaking Skills

According to the findings of the study, it is seen that students' speaking skills improve and they express themselves better thanks to drama activities that center on body language. Speaking skills, which can be developed with appropriate methods without being considered as an already acquired skill when you start your education life, can be supported with drama. In Kesici's (2021) study, it is seen that the method/technique used most by researchers to improve speaking skills is drama. Sevim and Turan (2017) concluded in their study that drama activities are more effective in developing students' speaking skills than activities carried out according to the current curriculum. In this case, teachers are expected to include activities and practices in their lessons that will enable them to achieve the objectives in the curriculum and to choose the appropriate method and technique. Marschke (2005) also mentions in his study the positive effects of lessons taught with drama on students' communication and language skills. The study of Akdaş et al. (2007), who concluded that children who participated in drama activities were more advanced in terms of language development than children who did not participate, and the study of Maden and Dinç (2017), who found that the drama method gave more successful results in speech compared to the traditional method, coincide with the research in terms of results. Again, in Uysal's (2014) study, the contribution of drama-based language education to speaking skills was revealed, and in Turan and Semim's (2017) study, the contribution of drama to speaking skills was revealed. This result is similar to the results of many studies in the literature and reveals that drama positively supports children's language skills (Acarlıoğlu, 2020; Pat, 2017; Eti and Aktaş 2016; Yalçınkaya and Adıgüzel, 2019; Iamsaard and Kerdpol 2015; Erdoğan, 2013; Ünsal, 2005; Kuimoval et al., 2016; Galante and Thomson, 2017).

According to the interview findings, it is seen that the students are able to speak in front of the community thanks to the self-confidence they gained through body language-based drama. Guida (1995) found that even students who were not confident in speaking in public were willing to participate in drama activities. Adıgüzel stated in his study that drama has the feature of sub-goals such as trust and self-confidence (2019, p. 100-101). Drama increases children's self-confidence by encouraging interaction with the group (Švábová 2017, p. 119), and even shy students gain confidence thanks to the social qualities of drama (Philips, 2003). However, the result of the current research coincides with the results of various studies conducted at home and abroad (Umdanş 2019, Karaosmanoğlu 2015, Jindal-Snape et al., 2011; Freeman et al., 2003; Larsen-Freeman, 1986; Yassa, 1999).

It is observed that dialect use, which is one of the common problems in speaking skills, decreases after the activities. It was stated that after the feedback received from students who had stuttering problems, this problem decreased. Again, it was observed that students with stuttering problems felt less anxiety while speaking, which supports the quantitative data. Positive feedback obtained from the data after drama activities reveals that speaking skill is a skill that develops with practice and training (Yalçın, 2002).

Conclusion and Discussion on Classroom Speaking Skills

Feeling comfortable with their in-class speaking skills positively affected their participation in the lesson, and there was an improvement in both peer communication and communication with the teacher. This result may be due to the fact that students take on various roles in the role-plays, communicate with their friends, and establish positive peer and teacher relationships as a result of processes such as sharing and helping each other about dramatic situations. This result coincides with the study by Pinciotti (1993). In the study in question, it is seen that students express themselves more easily at every stage of creative drama.

Conclusion and Discussion on Speaking Skills Outside the Classroom

It is understood from the answers given to the interview questions that body language-centered drama activities have a positive impact on speaking skills outside the classroom as well as in the classroom. The skills gained through drama studies are transferred not only to the school environment but also to daily life (Acarlıoğlu 2020). It is seen that students who previously had problems in family communication and were unable to express themselves improved themselves at the end of the process. Similarly, students who avoid talking in communication with strangers can communicate more easily by getting rid of their anxiety over time. It can be said that it characterizes the student's ability in the process of adapting to society, interacting and establishing relationships with others through drama. Yang (2007), who stated that children communicate more easily with those around them because drama is interesting and requires participation, reached a similar conclusion in his study. The positive effect of drama on communication is similar to the results of many studies in the literature (Baldwin, 2020; Ökten and Gökbulut, 2015; Aslan, 2008). Being appreciated by others for a student whose communication skills improve is also among the student's achievements.

Conclusion and Discussion Regarding the Body Language Category

According to the research findings, there is an increase in the use of conscious body language after body language-centered practices in Turkish lessons. Research shows that approximately 60% of the communication process occurs through body language expressions (Dinçer, 2012), revealing the importance of non-verbal

communication. In his research, Maden (2010b) mentioned the positive effect of drama on the development of students' non-verbal communication skills. Faculty members who participated in Nalçacı's (2019) research stated that the drama method improved individuals' verbal and non-verbal communication skills and self-confidence. It is seen that students who realized this importance during the research process and understood what body language is, how it is used and its role in communication, started to benefit from body language while speaking. Students discovered how to speak with gestures and body movements without words, thanks to body language (Karadağ and Çalışkan, 2005, p.107-109). At the same time, discovering the aspect of body language that fosters communication, which is a critical element of exhibiting and perceiving behaviors, is important as it reveals that it strengthens interpersonal relationships and increases success in communication. Bulut and Korkmaz (2005) mention that the fact that body language is not seen as a language activity among speech activities causes it to be evaluated as a non-linguistic activity. However, studies show that body language-centered drama activities make speaking skills practical, entertaining and permanent.

Conclusion and Discussion Regarding the Future Goals Category for Speaking Skills

When the study results were examined, it was seen that students' desire to be on stage outside of school increased in the category of future goals after body language-centered drama activities. Similarly, it is seen that the students who participated in McLauchlan and Winters' (2014) research want to go on stage by improving their theater performance skills. At the same time, students who have increased awareness of body language want to share what they have learned with others. By supporting communication in and out of the classroom, drama improves the social aspect of the student, allows him to empathize with others and supports all kinds of sharing (Sternberg, 1998).

Conclusion and Discussion Regarding the Findings Obtained from the Observation Form

It is seen that drama practices have a positive effect on the use of gestures and facial expressions, which are important elements of body language. Again, the increase in body posture and eye contact can be interpreted as body language-centered drama practices achieving their purpose. Similarly's (2015) study on the use of body language in teaching Turkish also mentioned the positive effect of making eye contact while speaking on learning and attitudes. It is seen that students have achieved the acquisition of breathing in the right place at the end of the process regarding speaking skills. Another positive effect on speech gains is evident in stress and intonation, which are very important in speech. No memorization in drama enables the student to make an effort to use his/her speech effectively and to pay attention to the pronunciation features of the words, stress and intonation (Kara, 2007, p.98). The student who learns to pay attention while speaking also improves his ability to speak clearly and fluently during the process. Yılmaz (2000) shows in his study that speaking skills can be improved with creative drama in teaching Turkish. Another data in the observation form shows that hesitations, which are undesirable situations of speaking skills, have decreased. Positive effects were observed in the speech of students (P2, P18) who had stuttering problems while speaking, after body language-centered drama activities. A similar situation is seen in the student (P8) who uses the local dialect. Observation form data generally shows that body language-centered drama is of great importance in helping students gain the ability to express their voice, body, emotions, thoughts and themselves correctly (Yılmaz, 1999) in drama activities.

Conclusion and Recommendations

This section contains the results of the research and recommendations.

Conclusion

In this study, it was aimed to observe the effect of body language-centered drama activities on students' speaking skills in secondary school Turkish teaching.

The results of the research are listed below.

1- In the control group, there is no statistically significant difference between the pre-application and the post-application in the interest and love sub-dimension.

2- In the control group, there is no statistically significant difference between the pre-application and the post-application in the anxiety sub-dimension.

3- There is a significant increase in the interest and love sub-dimension in the experimental group between the pre-application and the post-application.

4- There is a significant increase in the anxiety sub-dimension in the experimental group between the pre-application and the post-application.

5- It is seen that the Turkish lesson taught with body language-centered drama activities increases the students' attitudes of interest and affection towards speaking skills compared to the regular Turkish lesson.

6- It is seen that the Turkish lesson taught with body language-centered drama activities significantly reduces the students' anxiety about speaking skills compared to the regular Turkish lesson.

7- It is seen that the student's increased interest and love for speaking skills continues in the body language-centered drama activities implemented in Turkish lessons, and the decrease in anxiety observed in the student is permanent.

8- As a result of the interview and diary data, it is seen that body language-centered drama practices improve speaking skills.

9- As a result of the interview data, it was observed that body language-centered drama practices improved self-confidence.

10- As a result of interview, diary and observation form data, it was observed that body language-centered drama practices reduced stuttering.

11- As a result of the interview data, it is seen that body language-centered drama practices improve students' speaking skills in and outside the classroom.

12- As a result of the interview data, it is seen that body language-centered drama practices positively affect the use of body language in daily life.

13- As a result of the data obtained from the observation form, it is seen that body language-centered drama practices have a positive effect on both speaking skills and body language use.

Recommendations

Suggestions regarding the results obtained in line with the sub-problems of the research are listed below.

Recommendations for Researchers

-The diversity in the qualitative data collection tools of this research was positively reflected in the research findings. The codes that were not obtained from the diaries were obtained from the interview, interview form or observation form, and similarly, the findings that could not be obtained from the interview and interview form were obtained from the diaries. In this context, it can be suggested that researchers who will use creative drama in their research should benefit from different data collection tools.

-Researchers who will use cameras may be advised to consider any technical malfunctions they may experience during recording and use a spare device.

-Students in the middle school age group may occasionally exhibit careless behavior while filling out their diaries. It is recommended that researchers explain to students the purpose of using diaries in the face of such behavior and provide detailed explanations in order to obtain reliable data.

-Although it is seen in the quantitative findings of the research that drama has a positive effect on speaking skills throughout the scale, the findings obtained with quantitative data do not adequately express how drama affects speaking skills. In qualitative findings, data revealing how drama affects speaking skills were obtained. In this context, it may be recommended that the mixed research method, in which quantitative and qualitative research methods are used together, be preferred in in-depth research using the drama method.

-The fact that no interviews were conducted after each workshop in this research can be stated as a limitation of the study. In studies where drama will be used, interviews can be held at the end of each workshop and the gains achieved in the workshops can be examined in depth.

-The fact that only seventh grade secondary school students were included in this study can be stated as a limitation of the research. Similar research can be conducted with different groups at various levels of education.

-It may be recommended to use body language-centered drama activities not only on speaking skills but also on other language skills, speech disorders and speech defects, and examine their effects.

Suggestions for Drama Practices

-Researchers who will use the drama method in their research can test the weaknesses and strengths of the workshops they have prepared by piloting them before doing the actual study. In particular, it may be recommended to pay attention to the dramatic fiction of the role-play section, which forms the framework of the drama, to be understandable by age groups.

-Since the participants are frequently on the move during drama practices, attention can be paid to the hygiene in the environment, the structure of the floor, ventilation of the classroom, and warning students about personal hygiene before the workshops.

-Since the middle school age group coincides with adolescence, it may be suggested that students in this age group who do not want to participate in the same activity as boys and girls should be given the necessary explanations and encouraged to work in groups.
-In drama workshops aimed at improving speaking skills, techniques such as correct pronunciation, word limitation, speaking against time, and sentence limitation can be used in the role-play section.

Recommendations for Institutions

-Drama practices aimed at improving speaking skills in schools can be recommended to be used in out-of-school learning environments.

-It may be recommended to prepare different drama workshops to improve speaking skills in various age groups, turn them into a module and distribute them by the Ministry of National Education.

-Training on the preparation and implementation of drama can be expanded in in-service training programs prepared for teachers.

-It may be recommended to increase the hours of compulsory or elective drama courses in education faculties and to provide students with the opportunity to practice drama workshops they have prepared themselves.

Ethical Approval
Ethical permission (25.12.2020, 27/7) was obtained from the Firat University Social and Human Sciences Scientific Research and Publication Ethics Committee institution for this research.

References

Acarlıoğlu, H. (2020). *Sınıf öğretmenlerinin eğitimde drama kullanımına ilişkin yeterlilikleri ve dramaya ilişkin görüşleri (Kilis ili örneği).* Kilis 7 Aralık Üniversitesi, Lisansüstü Eğitim Enstitüsü, Eğitim Bilimleri Ana Bilim Dalı, Eğitim Bilimleri Bilim Dalı, Kilis.

Açıkgöz, K. (2003). *Aktif öğrenme.* İzmir: Eğitim Dünyası Yayınları.

Adıgüzel, Ö. (2007). Drama ve öğrenme ortamları. A. Öztürk (Ed.), *İlköğretimde Drama* (s. 33-47). Eskişehir: Anadolu Üniversitesi Yayınları.

Adıgüzel, Ö. (2017). *Eğitimde yaratıcı drama.* Ankara: Pegem Akademi.

Adıgüzel, Ö. (2018). *Eğitimde yaratıcı drama* (7. Baskı). İstanbul: Yapı Kredi Yayınları.

Adıgüzel, Ö. (2019). *Eğitimde yaratıcı drama.* Ankara: Yapı Kredi Yayınları.

Arıkan, E. N. Y. (2011). *İlköğretim okullarında yaratıcı drama yönteminin görsel sanatlar eğitiminde kullanılmasının erişi, tutum ve kalıcılığa etkisi: Meram İlköğretim okulu örneği.* Doktora Tezi. Selçuk Üniversitesi, Eğitim Bilimleri Enstitüsü, Konya.

Arıkan, Y. (2011). *Uygulamalı tiyatro eğitimi.* İstanbul: Pozitif Yayınları.

Aslan, E. (2008). *Drama temelli sosyal beceri eğitiminin 6 yaş çocuklarının sosyal ilişkiler ve iş birliği davranışlarına etkisi.* Yüksek Lisans Tezi. Adnan Menderes Üniversitesi, Sosyal Bilimler Enstitüsü, Aydın.

Aykaç M. ve Çetinkaya G. (2013). Yaratıcı drama etkinliklerinin Türkçe öğretmen adaylarının konuşma becerilerine etkisi. *International Periodical for the Languages, Literature and History of Turkish or Turkic*, 8(9), 671-682.

Aykaç, N. ve Ulubey, Ö. (2008). Yaratıcı drama yöntemi ile yapılandırmacılık ilişkisinin 2005 MEB ilköğretim programlarında değerlendirilmesi. *Yaratıcı Drama Dergisi,* 3(6), 25-42.

Aytaş, G. ve Kaplan, K. (2019). *Türkçe eğitimi ve iletişim.* Ankara: Akçağ Yayınları.

Bağcı, M. (2008). *Öğretmenin beden dilinin öğrenciler tarafından algılanması.* Yüksek Lisans Tezi. Beykent Üniversitesi, Sosyal Bilimler Enstitüsü, İşletme Yönetimi Anabilim Dalı, İstanbul.

Baldwin, P. (2013). *The primary drama handbook.* London: Sage Publication.

Baldwin, P. (2020). *İlkokulda drama el kitabı: Dramaya yeni başlayanlar öğretmenler için uygulama rehberi* (B. Akhun, N. Akkocaoğlu ve P. Özdemir, Çev.). Ankara: Pegem Akademi.

Baltaş, Z. ve Baltaş, A.(2001). *Bedenin dili.* İstanbul: Remzi Kitapevi.

Bozpolat, E. (2012). *Türkçe dersinde birleştirilmiş işbirlikli okuma ve kompozisyon tekniği ile kullanılan hikâye haritası yönteminin öğrencilerde okuduğunu anlama becerisini geliştirmeye etkisi.* Yayımlanmamış Doktora Tezi. Fırat Üniversitesi, Elazığ.

Bozpolat, E. (2017). An Investigation of the variables predicting faculty of education students' speaking anxiety through ordinal logistic regression analysis. *Journal of Education and Learning*, 6(1), 27-40.

Büyüköztürk, Ş., Çakmak Kılıç, E., Akgün, Ö. E., Karadeniz, Ş. ve Demirel, F. (2020). *Bilimsel araştırma yöntemleri.* (29. Baskı). Ankara: Pegem Akademi.

Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö.E., Karadeniz, Ş. ve Demirel, F. (2018). *Bilimsel araştırma yöntemleri*. (15. Baskı). Ankara: Pegem Akademi.

Creswell , J. W. and Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches.* SAGE Publications.

Creswell, J. W. (2013). *Nitel araştırma yöntemleri beş yaklaşıma göre nitel araştırma ve araştırma deseni.* (M. Bütün ve S. B. Demir, Çev.) Ankara: Siyasal Kitabevi.

Cüceloğlu, D. (2000). *İnsan insana.* İstanbul: As Matbaacılık.

Çalışkan, N. ve Karadağ , E. (2005). Dramada beden dili. *Gazi Üniversitesi Kırşehir Eğitim Fakültesi Dergisi,* 6(2), 103-113.

Çelebi, M. ve Orman, F. (2021). Veri toplama teknikleri. M. Çelebi (Ed.), *Nitel araştırma yöntemleri* (s. 142-166). Ankara: Pegem Akademi.

Dökmen, Ü. (2005). *İletişim çatışmaları ve empati.* İstanbul: Sistem Yayıncılık.

Ergin, A. (2010). *Eğitimde etkili iletişim.* Ankara: Anı Yayıncılık.

Ergin, M. (2008). *Türk dil bilgisi.* İstanbul: Albayrak Matbaası.

Freeman, G. D., Sullivan, K. and Fulton, C. R. (2003). Effects of creative drama on self-concept, social skills, and problem behavior. *The Journal of Educational Research*, 96(3), 131-138.

Güngör, N. (2015). *İletişime giriş.* Ankara: Siyasal Kitabevi.

Harrison, L. (1999). *Drama curriculum bank key stage one scottish levels. C-E.* U.K.: Scoalistic LTD.

Iamsaard, P. ve Kerdpol, S. (2015). A study of effect of dramatic activities on ımproving english communicative speaking skill of grade 11th students. *English Language Teaching*, 8(11), 70-78.

Jalongo, M, R. ve Hirsh, R.A. (2010). Understanding readinganxiety: New insights from neuroscience. *Early Childhood Education Journal*, 37 (6), 431-435.

Jarrah, H. (2019) The Impact of Using Drama in Education on Life Skills and Reflective Thinking. https://doi org/10.3991/ijetvl4i09.7978

Jindal-Snape, D., Vettraino, E., Lowson, A., and McDuff, W. (2011). Using creative drama to facilitate primary–secondary transition. *Education*, 39(4), 383-394.

Kara, Ö. T. (2007). Eğitimde hayata açılan pencere drama. *Osmaniye Rehberi*, (40–41), 16–18.

Kara, Ö.T. (2007). Drama yönteminin ilköğretim Türkçe derslerinde kullanılması. *Türkiye 9. Drama Liderleri Buluşması ve Ulusal Drama Semineri*, s.97-98, Ankara: Oluşum Yayınları.

Kara, Ö.T. (2010). *Dramayla öykü oluşturma yönteminin ilköğretim ikinci kademe Türkçe öğretimine etkisi.* Doktora Tezi. Selçuk Üniversitesi, Eğitim Bilimleri Enstitüsü, Eğitim Bilimleri Bölümü, Türkçe Eğitimi Ana Bilim Dalı, Türkçe Eğitimi Bilim Dalı, Konya.

Karadağ, E. ve Çalışkan, N. (2005) *Kuramdan uygulamaya ilköğretimde drama.* İstanbul: Anı Yayıncılık.

Kardaş, N. (2016).Yaratıcı dramanın öğrencilerin konuşma kaygılarının giderilmesine etkisi. *Uluslararası Sosyal Araştırmalar Dergisi*, 9(45), 598-604,

Kardaş, N. (2018). *Drama etkinliklerinin 7. sınıf öğrencilerin Türkçe dersi konuşma becerisi ve kaygısına etkisi: Karma yöntem araştırması.* Siirt Üniversitesi, Sosyal Bilimler Enstitüsü, Türkçe Eğitimi Ana Bilim Dalı, Siirt.

Kardaş, N. and Koç, R. (2017). Effect of drama ınstruction method on students' Turkish verbal skillsand speech anxiety. *International Journal of Progressive Education*, 13, 64-78.

Kardaş, N. ve Akın, E. (2019). Drama etkinliklerinin 7. sınıf öğrencilerinin Türkçe konuşma kaygılarına etkisi. *Kuram ve Uygulamada Sosyal Bilimler Dergisi*, 3(2), 91-113.

Kesici, S. (2021). *Konuşma becerisini geliştirmek için kullanılan öğretim yöntem ve teknikleri ile ilgili çalışmalar üzerine bir inceleme.* Pamukkale Üniversitesi, Eğitim Bilimleri Enstitüsü, Türkçe ve Sosyal Bilimler Eğitimi Ana Bilim Dalı, Denizli.

Larsen-Freeman, D. (1986). *Techniques and principles in language teaching.* Oxford: Oxford University Pres.

Mackay, L. (1997). *Dinleme becerisi.* (B. Aksu ve O. Koçak, Çev.). Ankara: İlk Kaynak Kültür ve Sanat Ürünleri Ltd. Şti.

Maden, S. (2010). Türkçe öğretiminde drama yönteminin gerekliliği. *TÜBAR*, 27, 503-519.

Maxwell, J. A. (2018). *Nitel araştırma tasarımı etkileşimli bir yaklaşım.* Ankara: Nobel Akademik Yayıncılık.

McCaslin, N. (2019). *Yaratıcı drama sınıf içinde ve dışında.* (P. Şimşek, Çev.). Ankara: Nobel Akademik Yayıncılık.

McLauchlan, D. ve Winters K.L. (2014). What's so great about drama class? Year secondary students have their say. *The Journal of Applied Theatre and Performance*, 19(1), 51-63.

McNeill and Wiles, J. (1990). *Adapted from the essentials of teachin.* New York: Macmillan Reprinted by Permission.

MEB. (2006). *İlköğretim Türkçe dersi (6,7,8. sınıflar) öğretim programı.* Ankara: MEB Yayınları.

MEB. (2018). *Türkçe dersi öğretim programı (İlkokul ve ortaokul 1, 2, 3, 4, 5, 6, 7 ve 8. sınıflar).* Ankara: MEB Yayınları.

MEB. (2019). *Türkçe dersi öğretim programı (İlkokul ve ortaokul 1, 2, 3, 4, 5, 6, 7 ve 8. sınıflar)*. Ankara: MEB Yayınları.

Merriam, S. B. (2018). *Nitel araştırma desen ve uygulama için bir rehber* (S. Turhan, Çev.) Ankara: Nobel Yayıncılık.

Miller, Patrick W. (2005). Body language in the classroom. *Techniques: Connecting Education and Careers,* 80(8), 28-30.

Özbent, S. (2007). Sınıfta beden dili. *Gazi Üniversitesi Eğitim Fakültesi Dergisi*, 27(2), 259-289.

Özdemir, E. (2004). *Güzel ve etkili konuşma sanatı.* İstanbul: Remzi Kitabevi.

Perkins, D. (1999). The many faces of constructivism. *Educational Leadership*, 6-11.

Philips, S. C. (2003). *Drama with children*. Oxford: Oxford University Press.

Reca, Ö. F. (2017). Beden *dili başarılı ve güzel konuşma sanatı*. İstanbul: Tutku Yayınevi.

Sağlam Yeşiltepe, Ö. (2010). *7. Sınıf öğrencilerinin hazırlıksız konuşma becerileri üzerine bir araştırma*. Yüksek Lisans Tezi. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.

Sağlam, T. (2006). Gavin bolton drama- sanat- öğrenme, *Yaratıcı Drama Dergisi*, 1(2), 90-98.

San, İ. (1990). *Yaratıcı drama ile farklılıklar ve farkındalıklar*. Ankara: Pegem Akademi Yayıncılık.

San, İ. (2002). Yaratıcı drama-eğitsel boyutları. H. Ö. Adıgüzel (Ed.), *Yaratıcı drama 1985-1995 yazılar* (s. 81-88). Ankara: Naturel Kitap Yayın Dağıtım.

Sapmaz, C. (2010). *Harriet Finlay-Johnson'ın genel eğitim anlayışı içinde dramaya yaklaşımının değerlendirilmesi*. Yüksek Lisans Tezi. Ankara Üniversitesi, Eğitim Bilimleri Enstitüsü, Ankara.

Slade, P. (1969). *Child drama*. London: Hodder and Stroughton.

Slade, P. (1995). *Child play: Its importance for human development.* London: Jessica Kingsley

Tayfun, R. (2011*). Etkili iletişim ve beden dili.* Ankara: Nobel Yayın Dağıtım.

Temizyürek, F., Erdem, İ. ve Temizkan, M. (2007). *Konuşma eğitimi*. Ankara: Öncü Kitap.

Temizyürek, F., Erdem, İ. ve Temizkan, M. (2017). *Konuşma eğitimi*. Ankara: Pegem Akademi Yayıncılık.

Topçuoğlu Ünal, F. ve Özer, D.(2017). Ortaokul öğrencileri için konuşma becerisi tutum ölçeği: geçerlilik ve güvenirlik çalışması. *International Journal of Language Academy*, 5(6), 120-131.

Türk Dil Kurumu. (2013). *Türkçe sözlük.* Ankara: TDK.

Van Riper, C. and Emerick, L. (1990). *Speech correction: An introduction to speech pathology and audiology, Englewood cliffs*. NJ: Prentice Hall.

Vural, B. (2007). *Uygulama örnekleriyle doğru ve güzel konuşma sanatı*. İstanbul: Hayat Yayıncılık.

Yalçın, A. (2002). *Türkçe öğretim yöntemleri: Yeni yaklaşımlar*. Ankara: Akçağ Yayınları.

Yaman, E. (2004). *Doğru, güzel ve etkili konuşma sanatı*. Ankara: Savaş Yayınevi.

Yıldırım, A. ve Şimşek, H. (2008). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.

Zıllıoğlu, M. (2010).*İletişim nedir?* İstanbul: Cem Yayınevi.

The Effects of Using Peer-Led Team Learning Model in Science Courses on Students

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Abstract

This study aims to explore the views of the fourth-year pre-service science teachers and science education master's program students regarding the effects of using the Peer-Led Team Learning (PLTL) model in science courses on the students. A total of 56 participants—28 undergraduates and 28 graduate students—participated. The Views About the PLTL Model A questionnaire and a semi-structured interview form were used as data collection tools. Content analysis was used during the data analysis. The results suggested that the PLTL model has positive and negative effects on peer and leader students in terms of "learning", "motivation/attitude" and "skills". The number of participants emphasizing positive effects in both questionnaire and interview data was much higher than those referring to negative effects. In other words, more participants agreed on the positive effects. When the possible positive and negative effects of the PLTL model were evaluated, the positive effects were identified as valuable for the education process, and the negative effects may be eliminated or minimized.

Keywords: Peer-led team learning model, PLTL, Science education

Introduction

An ongoing interest in science and technology has required the adaptation of countries to the developments and innovations. This is possible by harnessing countries' education systems and following scientific as well as technological innovations around the world (Değerli, 2021). Therefore, science education becomes effective in raising individuals who meet the needs of the age since changes and developments in science and technology constantly affect education, which, in turn, contributes to scientific and technological advances (Selvi & Yıldırım, 2017). Ayas (1995) noted that one cannot underestimate the significance of science in the development of countries; therefore, some practices are conducted to improve the curricula to promote the quality of science education and provide opportunities for the implementation of these curricula. In Turkey, considerable steps have been taken in terms of improving the science curriculum, especially since the early 2000s (Ministry of National Education [MoNE], 2006; MoNE, 2013; MoNE, 2018). The Science Curriculum published in 2018 and in force today reports that individuals should possess some qualifications such as producing knowledge, using it functionally in life, solving problems, thinking critically, having communication skills, empathizing, contributing to society and culture, etc. Besides, the curriculum points out the necessity of students' active performance, which further leads to the use of active learning methods in teaching practices (MoNE, 2018). The studies revealed that active teaching methods are more effective than classical methods (teacher-centered methods) at cognitive (Akkurt, 2010), affective (Akpınar et al., 2016), and psychomotor (Birgili, 2022) levels.

The active learning process involves avoiding the teacher's monotonous instruction, monitoring students' progress instead of rewarding or punishing them with grades, providing guidance in case they encounter a problem, and encouraging them to make their own decisions instead of teacher-centered decisions; in short, actions such as hearing, seeing, asking relevant questions, and exchanging opinions are carried out to ensure active learning (Kıyıcı, 2004). Since permanent learning can be honed through practice, there is a need for environments where students can use their knowledge and minds. Hence, teachers acutely prefer active teaching methods that stimulate students to gain high-level cognitive skills such as analyzing and evaluating (Şimşek &

Yeşiloğlu, 2014). Even though its foundations date back to ancient times, peer tutoring describes the active learning process that has come into prominence in recent years, especially when the significance of student-centered methods has been emphasized.

Peer tutoring is defined as a model for all students to take an active role and to improve communication skills in crowded classrooms where they ensure interactions with peers on group tasks (Şimşek & Yeşiloğlu, 2014). In addition, researchers stated that the teacher can get feedback from all students at the same time, get information about the learning situation of the class, not waste time, and make an efficient application because it is not tiring (Şimşek & Yeşiloğlu, 2014). Peer instruction includes techniques in which peers evaluate and support each other and provide feedback to increase student academic achievement and make a lasting change in behaviors (Gülçek, 2015). Olmscheid (1999) pinpointed that peer tutoring has the potential to provide success for students of all ages and ability levels, regardless of factors outside the school (cultural background, socioeconomic status, or race). Töman and Yarımkaya (2018) concluded that peer tutoring allows students to support one another, to share practices, to take an active role in the feedback process, and to reinforce the instruction process together. Studies conducted on various disciplines put forward the idea that peer tutoring increases student achievement (Eryılmaz, 2004; Kurt, 2020; Nobel, 2005; Öncül, 2020; Özcan, 2017; Sencar-Tokgöz, 2007; Tao, 1999).

Peer-Led Team Learning (PLTL) model is one of the methods by which peers facilitate group learning. The PLTL model highlights that selected and trained peer leaders mediate group work processes in weekly meetings with the aim of discovering solutions to previously introduced problems (Gosser et al., 2010). In this model, students who have previously completed the theoretical part of the course are peer leaders. Thus, in this model, there is a process in which peer leaders and students interact with each other by conducting activities such as debate, discussion, and problem-solving in peer student groups under the guidance of peer leaders (Gosser et al., 2010). As seen in many studies in the literature (Eren-Şişman et al., 2018, Lewis, 2011, Wells, 2012), peer studies in this model start after the theoretical lessons. The teaching methods and routine used by the teacher in the teaching process are preserved since peer leaders get involved after the theoretical part of the lesson. The components (teacher's responsibilities) that are critical for the PLTL model are leader selection, training and continuous supervision, appropriate materials, and an appropriate setting (duration and room) (Gafney & Varma-Nelson, 2008). In this sense, leaders are selected among students who are successful and who have good communication and leadership skills. Since successful leaders must have more than content knowledge, they receive good and careful training for the role they take on. The peer leader does not answer the questions or act as a substitute teacher during the lesson but facilitates the group (Varma-Nelson, 2006). Peer leaders encourage their peers to interact with one another, share their thoughts and discussions, and provide solutions to problems (Gosser et al., 2001).

Current literature includes numerous studies emphasizing that the PLTL model increased students' achievement in science subjects (Drane et al., 2014; Eren-Şişman et al., 2018; Gosser et al., 2010; Hockings et al., 2008; Tenney & Houck, 2003; Tien et al., 2002; Tuzlukaya et al., 2022; Wilson & Varma-Nelson, 2021). Besides, the studies carried out to acquire and develop the 21st century skills, which are the greatest needs of our age, have revealed that the PLTL model helps students develop their communication skills (Erişmiş, 2017), problem solving, teamwork, personal skills (Chase et al., 2020), and critical thinking (Quitadamo et al., 2009). Some studies have also suggested that the PLTL model positively affects affective characteristics in science instruction (Hockings et al., 2008; Tienet al., 2002; Tuzlukaya et al., 2022). However, it may be wise to mention that these studies have been mostly carried out at the university level. There is a dearth of studies conducted at the primary, middle, or high school levels (Ahmed & Haji, 2022; Lamina, 2021; Njoku, 2020; Okeya, 2022; Wells, 2012). The views of the teachers and pre-service teachers on the implementation are significant in terms of analyzing the model in science subjects at the middle school level. In this study, the views of the undergraduate and graduate students (pre-service science teachers and science teachers) regarding the effects of the model on students with reference to the implementation of the model in middle school science courses were investigated.

In this direction, the aim of this study is to investigate the views of the fourth-year pre-service science teachers and Science Education Master's Program students regarding the possible effects of using the PLTL model in science courses on the students.

Research questions are determined as follows:
1- What are the views of the fourth-year pre-service science teachers and science education master's program students regarding the effects of the PLTL model on peer students?

2- What are the views of the fourth-year pre-service science teachers and science education master's program students regarding the effects of the PLTL model on peer leaders?

Method

The case study, which is a qualitative research design and includes an in-depth explanation and analysis of a limited system (Merriam, 2015), was used in this study. The reason for using the case study design is that the participants of this study were from a single university, and it was planned to conduct in-depth research through different data collection tools. Accordingly, in this study, the views of undergraduate and graduate students enrolled in a state university in Turkey on the effects of using the PLTL model in science courses on students were examined. A questionnaire was applied to all students who voluntarily participated in the study, and then interviews were conducted with the students determined to provide maximum diversity.

Participants

The participants consisted of 28 fourth-year students enrolled in the Science Teaching Program at a state university in Turkey and 28 graduate students learning at the Science Education Master's Program with Thesis. The reason for including graduate and undergraduate students in the research is to ensure that the diversity of data is as large as possible. In addition, the presence of science teachers registered in the master's program is another factor that enriches the diversity of the data. Among the participants, 50 are female and six are male. Eighteen of the participants with a master's degree have professional experience. Table 1 showed details regarding the participants' professional experience and type of institution.

Table 1. Distribution of the participants' professional experience and type of institution

Institution	1-5 years	6-10 years	10-15 years
Middle school affiliated with MoNE	3	5	1
Private school	6	0	0
Training center	2	0	0
Unspecified	1	0	0
Total	12	5	1

As seen in Table 1, three of the students have 1-5 years of experience, five 6-10 years of experience, and one 10-15 years of experience in a public school. Six of them have 1-5 years of experience in a private school, and two of them have 1-5 years of experience in a training center. One student has not specified the type of institution.

Data Collection Tools

The data was collected using the Views About the PLTL Model Questionnaire and a semi-structured interview form. This study is part of extensive research. For this reason, the data collection tools used in this research are more comprehensive than the research questions in this study.

Views about the PLTL Model Questionnaire

This form was developed by the researcher by considering the views and suggestions of six experts (two of them are academicians specialized in science education; one academician who graduated from the Science Education Program and has a master's and doctorate degree in educational sciences; one doctoral student working as a science teacher in a school affiliated with the Ministry of Education; and two are science teachers working in a school affiliated with the Ministry of National Education). The pilot study was conducted with four volunteers. The form got its final version with two parts, including personal information and 12 open-ended questions. Then, all participants responded to the questionnaire. Examples of questions in the questionnaire are as follows: (*i*) Do you use the peer-led team learning model in your lessons? Explain the reason for your answer? (*ii*) Is the peer-led team learning model suitable for students at all grade levels? Explain the reason for your answer. (*iii*) Evaluate the implementation phase of a course in which the peer-led team learning model will be used.

Semi-Structured Interview Form

This form was developed by the researchers by taking into account the data collected from the Views about the PLTL Model Questionnaire. The interview form was structured with the views and suggestions of four experts (two of them are academicians specialized in science education, one academician who graduated from the Science Education Program and has a master's and doctorate degree in educational sciences, and one is a science teacher working in a school affiliated with the Ministry of Education). This form contains 11 questions. Some of these questions are very similar to the questions in the questionnaire, some are the same, and some are completely different. In addition, in order to access detailed and in-depth data, sub-questions have been created for 10 of the questions in this form. Two examples of questions from the interview form are as follows:

Example Question 1:
Evaluate the implementation phase of a course in which the peer-led team learning model will be used.
    - Is it possible that there may be problems during the implementation phase?
        - What precautions can the teacher take regarding problems that may occur during the implementation process?
    - Does the implementation phase have advantages compared to other teaching models?
    - Does the implementation phase have any disadvantages compared to other teaching models?
        - (If the answer is 'yes') what can be done to eliminate the disadvantages?

Example Question 2:
Is the peer-led team learning model suitable for students of all achievement levels?
    - Evaluate the work of students of different achievement levels in the same group.
    - Evaluate the use of the model in classrooms with high and low achievement levels.

A pilot study was conducted with two volunteer participants. Afterwards, the interviews were held with 14 participants who were determined heterogeneously (e.g., student, teacher, male, female) to ensure the maximum data variety. In this sense, five of the participants are Science Education Program fourth-year students (three female and two male), and nine of them are Science Education Master's Program students (six female and three male). Three of the graduate students have experience in public institutions affiliated with the Ministry of National Education, one in a private school, and one in a training center.

Research Process

The researchers held an information meeting on the PLTL model in which undergraduate and graduate students participated via the Microsoft Teams platform. The participants were informed about the model; however, no details were given about the positive or negative effects of the model on the educational process. Then, the researchers presented two sample lesson plans prepared by adapting the PLTL model to the middle school level. These two lesson plans were prepared on the subject of "Full Shadow", one of the physics subjects, in accordance with the science lesson objectives. Six experts' views (two physics education expert academicians, one science education expert academician, one science teacher with a doctorate degree in science education, and two science teachers) were received during the development process of the lesson plans. Following the presentation, which included the details of the model and sample lesson plans, the participants completed the Views about the PLTL Model Questionnaire via Google Forms. Interviews were conducted via the Zoom platform and lasted about 50-60 minutes on average. The interviews were recorded with the permission of the participants and completed within a week.

Data Analysis

Content analysis was used during the data analysis. The interviews were transcribed by the researcher. During the data analysis, a table format was generated for each positive and negative effect recorded according to this table format, and codes were identified. The tables were filled in separately for the effects of the model on peer students and leader students.

The codes were generated in a way that best reflects the current situation as much as possible, namely, as they are. For instance, a participant thought that the model would increase motivation, attitude, and interest as a positive effect; therefore, these three concepts were coded separately even though they were related to one another. Because there were also other participants who mentioned only one or two of them. Similar codes were classified, and categories were generated. The codes were classified under four categories: "learning", "motivation/attitude", "skill" and "other". The codes in the other category were excluded from the

scope of this study since they were associated with at least one of the categories of learning, motivation/attitude, and skill, yet they were not clearly differentiated from which category they belonged to or may be included in more than one of them, and their frequencies were low. The descriptions of the categories are as follows:

Learning: Codes related to learning such as learning speed, easy learning, learning level, and learning quality.

Motivation/Attitude: Codes related to motivation/attitude such as motivation, attention, interest, curiosity, class participation, and attitude.

Skill: Codes related to skills such as communication, problem solving, critical thinking, and scientific process.

Two researchers worked in coordination, and agreement on the data was achieved during the interview data analysis process. The coding of the questionnaire data was as follows: One of the researchers coded the questionnaire data. Approximately 30% of the questionnaire data were also coded by the other researcher, and the inter-coder agreement rate was found to be 90.68% through the "consensus"/"consensus+disagreement" formula (Miles and Huberman 1994). Thus, the analyses are considered reliable in the present study.

While findings were presented, undergraduate students who participated in the questionnaire were coded as QUGS1, QUGS2, etc.; undergraduate students who participated in the interviews were coded as IUGS1, IUGS2, etc.; graduate students participating in the questionnaire were named as QGS1, QGS2, etc.; graduate students participating in the interviews were coded as IGS1, IGS2.

Findings
The findings of the research are presented in the following sub-headings according to the research questions: All findings obtained from the questionnaire and interview data are displayed in the same figure.

Findings on the First Research Question
The first research question of the study is "What are the views of the fourth-year pre-service science teachers and science education master's program students regarding the effects of the PLTL model on peer students?". The details of the findings related to this question are displayed in the following sub-headings:

"Learning" Category
This category includes 30 codes, 15 of which are positive and 15 are negative. To serve as an example, Figure 1 depicts the emerging codes with the highest number of participants and those with a small number of participants as they were for a special student group (unsuccessful, shy, etc.), the frequency of the codes (f), and the number of participants (n).

	Quest.		Interview	
	f	**n**	**f**	**n**
Active/meaningful/qualified learning is ensured.	22	16	30	13
The permanence of the learning outcomes/information increases.	12	11	28	14
The efficiency of the lesson increases / The lesson is efficient.	55	43	9	9
Students' course achievement/knowledge increases.	15	11	9	5
It becomes easier for students to learn/understand the subject.	19	15	18	8
Students' learning speed increases/may increase.	6	4	9	8

	Quest.		Interview	
	f	**n**	**f**	**n**
It becomes a more productive learning environment for shy students.	-	-	4	4
Learning is/may be easier for slow learners/unsuccessful students.	-	-	2	2
The learning speed of slow learners/unsuccessful students increases/may increase.	-	-	2	2

The emerging codes with the highest number of participants

The emerging codes for the special student group

Positive Effects

Effects on Learning

Negative Effects

The emerging codes with the highest number of participants

The emerging codes for the special student group

	Quest.		Interview	
	f	**n**	**f**	**n**
Students may have misconceptions.	6	5	9	3
The efficiency of the lesson may decrease.	7	7	2	2
It may not provide active/meaningful learning.	1	1	3	3
It becomes/may become difficult for students to learn/understand the subject.	4	3	1	1

	Quest.		Interview	
	f	**n**	**f**	**n**
Students with low achievement levels may not learn the subject.	2	2	1	1
The learning speed of fast learners/successful students decreases/may decrease.	1	1	3	2
The learning rate of shy students may decrease.	-	-	1	1
The efficiency of the course may decrease for shy students.	1	1	-	-

Figure 1. The emerging code samples in the "Learning" category

Figure 1 demonstrates that the number of participants stating positive effects in both the questionnaire and interview data was much higher than that of those stating negative ones. Therefore, more participants agree on the positive effects. Figure 1 also suggests that the first four positive effects were related to the level and quality of learning. Moreover, these four effects were highly interrelated. For instance, the responses of IGS9 relevant to the first three views are as follows*: The participant responded to the question, *"Will you use the model in your lessons?"* with the following statement: *"So I use it. I use peer tutoring as it provides more development in students, deepens their learning with their friends and leaders, and makes it more permanent..."* As regards the part of the interview where the participant commented on meaningful learning, *"I think their meaningful learning may increase, teacher. Well. As it will provide deepening, they can make more sense of the subjects together with their peers",* and in the part on the efficiency of the lesson, *"...I think it can be an efficient model when used correctly".* As for the questionnaire data on the emerging code

of "the retention of the learning outcomes/knowledge increases", QUGS19 responded to the question "*Evaluate the team learning model in Peer Leadership in terms of measurement and evaluation.*" as follows: *"The measurement and evaluation with different activities is effective in making the knowledge more permanent for the students."*

Figure 1 shows that the positive effects of "learning or understanding the subject becomes easier" and "students' learning speed increases or may increase" are related to learning speed or easy learning. As an example of the questionnaire data related to "It becomes easier for students to learn or understand the subject," QUGS12 responded to the question "*Do you use the peer-led team learning model in your lessons?"* with such words as "*Of course I use it... peer-led team learning facilitates learning as it depends on interaction."* In relation to the interview data, this finding was determined in three different parts of the interview, with IUGS3 indicating the advantages of the PLTL model as *"...the topics are easier to learn and become permanent"*, commenting on the retention of the learning outcomes, *"We will remember this more because learning will be easier, and we can use this information anywhere.".* In the later parts of the interview, the participant stated that the students would be willing to use the model and added the sentence *"...most students can learn more easily by communicating with their friends".*

This category also involves some effects on students with certain characteristics. In this regard, various positive effects were reported in the following expressions: "the learning of slow learners or unsuccessful students may be facilitated, their learning speed may increase, and a more productive learning environment may be created for shy students". Some of the views on the negative effects were determined as follows: students with low achievement levels may not learn the subject, and the learning speed of fast learners, successful students, and shy students may decrease. IUGS5 mentioned that the learning speed of successful students may decrease, and this may be because fast learners should wait for slow learners. On the other hand, IUGS2 emphasized that the learning speed of shy students might decrease, as there is a small possibility that shy students may be more hesitant.

The finding that was not mentioned in Figure 1 suggested that some of the participants put forward conditions for some of these effects. To exemplify, QGS12 stated that "active, meaningful, and qualified learning is ensured". The participant also answered the question *"evaluate the implementation phase of a lesson in which the peer-led team learning model is used"* as *"I think an active learning environment will be created if the process is well managed..."* At that point, this participant suggested that the process be well managed as a condition for an active learning environment. The conditions put forward for positive effects in this category (if the process is well managed, if the leader really has leadership qualities, etc.) already should be fulfilled on the basis of the model. This is valid for the negative effects, including the condition. To illustrate, IGS5 defined a negative effect as "Students may have misconceptions" and mentioned the disadvantages of the model during the interview process: *"...if the teacher cannot manage this process well, there may be misconceptions as the teacher cannot manage the class well".* The other conditions stated by the participants for adverse effects were noted as: "If the leaders do not take responsibility, if the leader is chosen incorrectly, if the teacher does not give feedback or correction, if the teacher organizes the groups incorrectly, if the leader has a misconception". Considering the conditions put forward for the negative effects, theese conditions were determined to be those that the teacher already must bring under control so that the model can be applied reliably.

The findings also revealed negative effects, which are the opposite of some positive effects, and these effects were often related to a condition. Most of the participants who were found to have the effect of "the efficiency of the lesson may decrease", which is the opposite of the effect of "the efficiency of the lesson increases", the most frequently emerging codes in the questionnaire data, underlined some conditions such as "if the students are reluctant, if the same model is used all the time, if the leaders are chosen incorrectly, if the teacher does not give feedback or correction".

While details were provided for other categories below, the condition proposed for positive effects was not detailed as it was at the core of the model. On the contrary, examples of the conditional sentences specified for the negative effects are presented, as it is thought to guide the trainers in minimizing or eliminating the negative effects.

"Motivation/Attitude" Category

37 codes, 24 positive and 13 negative, were identified in this category. Figure 2 summarizes the emerging codes with the highest number of participants and those for the special student group: the frequency of the codes (f) and the number of participants (n).

	Quest.		Interview	
	f	**n**	**f**	**n**
Students' motivation increases/may increase.	10	9	35	13
The student's participation in the lesson (effective, active, etc.) is positively affected.	40	26	17	12
The model enables students to be willing to the lesson.	3	3	13	12
The model grabs the students' attention.	5	5	16	12
Students' interest in the lesson/subject increases.	7	4	22	12
There is/may be positive competition among students.	3	2	16	11
Lessons are more fun.	16	13	9	6
Students' attitudes towards the lesson/subject increase/may increase.	3	3	16	8
Students' attitudes towards the teacher increase.	-	-	5	5

	Quest.		Interview	
	f	**n**	**f**	**n**
Shy students' participation in the lesson is positively affected.	2	2	-	-
Shy students' motivation increases.	-	-	-	-
Shy students' interest in the lesson increases.	-	-	1	1
Shy students' attitudes towards the lesson increase.	-	-	1	1
Shy students' attitudes towards the teacher increase.	-	-	1	1

The emerging codes with the highest number of participants

The emerging codes for the special student group

Positive Effects

Effects on Motivation/Attitude

Negative Effects

The emerging codes with the highest number of participants

The emerging codes for the special student group

	Quest.		Interview	
	f	**n**	**f**	**n**
Shy/quiet students' motivation may decrease/decreases.	1	1	2	2
Students with low achievement levels may lose motivation.	2	2	0	0
Dominant students can negatively affect shy students' energy.	2	2	1	1
It may not attract the attention/interest of low-achieving students.	1	1	3	2
The participation of shy students may decrease.	1	1	1	1

	Quest.		Interview	
	f	**n**	**f**	**n**
Students' motivation decreases/may decrease.	2	2	12	7
Leader selection may cause negative attitudes.	-	-	14	9
The model affects/may affect student participation (effective, active, less) negatively.	6	6	4	3
The model does not attract students' interest/decreases their interest in the lesson or the subject.	3	3	2	2

Figure 2. The emerging code samples in the "Motivation/Attitude" category

Upon analyzing Figure 2 in general, the number of participants with positive effects in the questionnaire and interview data was found to be higher than the negative ones. Therefore, more participants agree on the positive effects.

Some participants expressed their views by using the words motivation or attitude, while others expressed their opinions on concepts related to motivation or attitude such as interest, attention, and desire. As in Figure 2, the positive effects that most participants agreed on were that the students' motivation may

increase, their participation in the lesson will be positively affected, and the lessons will be more enjoyable. As for the negative effects, the participants particularly emphasized that the students' motivation may decrease, the choice of the leader may cause a negative attitude, and the student's participation may be negatively affected. Some of these positive and negative effects were opposite each other. For example, the results of the interview data suggested the positive effect of "students' motivation will increase or may increase" and the negative effect of "students' motivation decreases or may decrease" with the highest number of participants. However, all the participants announced that this negative effect could be experienced with conditions such as "if the friends they do not like are chosen as leaders, if the students with whom they do not get along well are in the same group, if there are students who are reluctant to be a leader, and if there are naughty or distracted unsuccessful students". To illustrate, IUGS1 stated the positive effect as "students' motivation increases" and evaluated the model in terms of attracting students' attention: "*It is a model that includes activities attracting the students' attention and that <u>motivates</u> students or offers them an opportunity to express their own knowledge. Therefore, it will attract the students' attention more, and they will get <u>more motivated</u>"*. The same participant evaluated the model in terms of achievement level and said, *"Students with a low level of achievement <u>may disrupt the motivation </u>of the group. Alternatively, it may prevent them from thinking in the moment. If s/he is a naughty student, if s/he is distracted, such things may occur"*. This paved the way for the result that if there are low-achieving, naughty, or distracted students in the group, these students may reduce the motivation of other students. Similar conditions were identified for most adverse effects. Some other conditional sentences were determined as "if the student is not selected as a leader at all, if the teacher makes a wrong grouping, if the students do not like to share their ideas, if the teacher acts biased in the selection of the leader, if the teacher acts sexist in the selection of the leader".

With regard to the effects on shy and low-achieving students, negative effects emerged as the opposite of positive effects. The condition "if there are students who want to talk a lot" was determined for only one of these negative effects (dominant students may negatively affect shy students' energy). The following excerpts about shy students can be presented as examples. QGS6, considered the positive effect as "the participation of shy students in the course is positively affected". The same participant responded to the question "What are the advantages of the peer-led team learning model?" as *"Students <u>who are ashamed of their teacher</u> can actively participate in the lesson.".* IUGS1 mentioned the negative effect with such a saying as "the motivation of shy or quiet students may decrease". This participant responded to the question, "So what do you say about the disadvantages of the model?" as *"...those who are silent may not join; their motivation may decrease."*

"Skill" Category
This category encompasses 34 codes, 29 of which were positive and 5 were negative. Most of the codes in this category were related to communication skills, and some were associated with other skills. Figure 3 presents the emerging codes with the highest number of participants and those for the special student group: the frequency of the codes (f) and the number of participants (n). Besides, the details of other skills are provided in Figure 3 since all of the codes that come into prominence are related to communication skills.
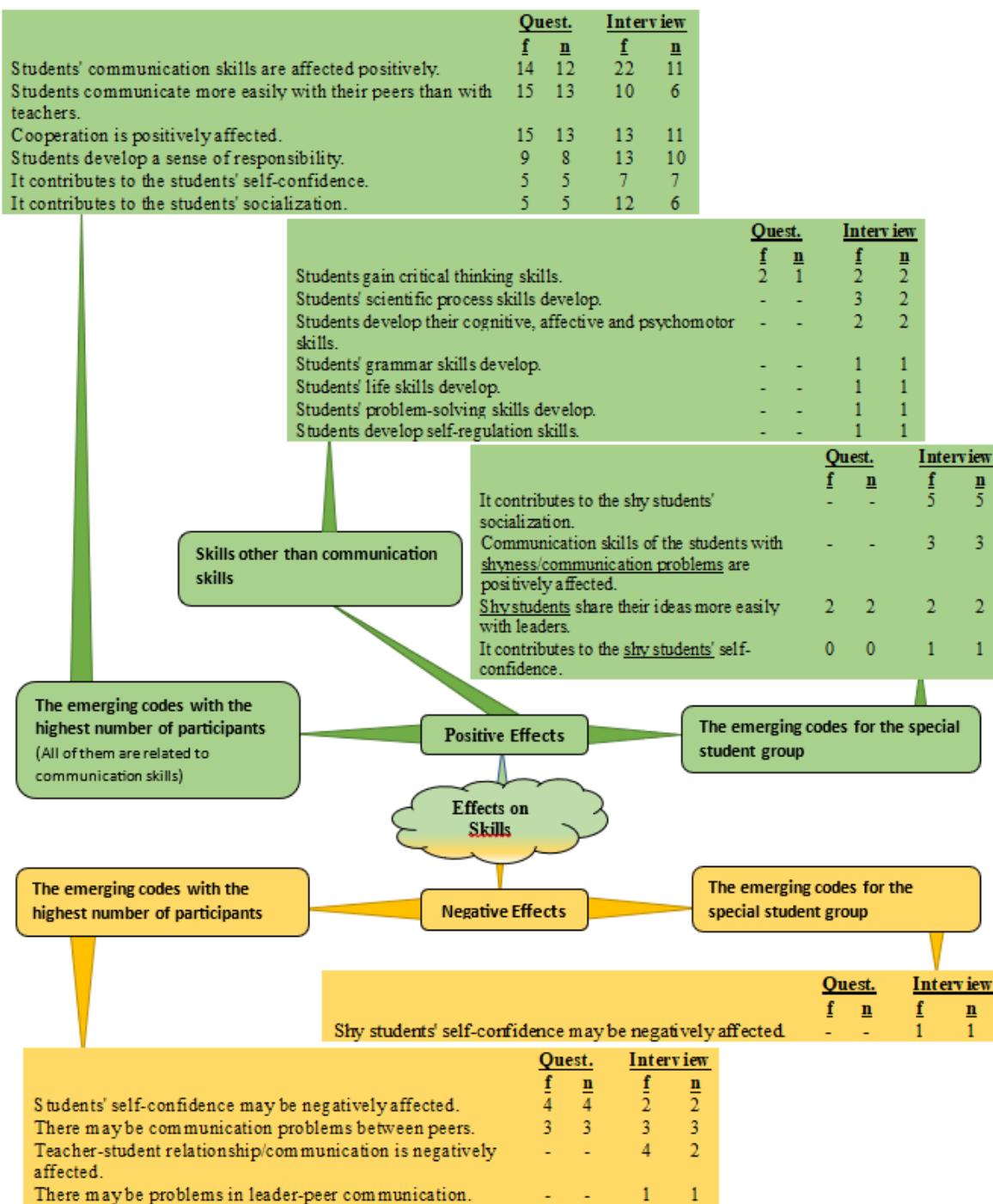
Figure 3. The emerging code samples in the "Skill" category

Figure 3 suggests that the number of participants expressing positive effects in the questionnaire and interview data was higher than that of those with negative views. Hence, more participants agree on the positive effects.

As in Figure 3, all of the prominent positive and negative effects in this category were related to communication skills. The effects on critical thinking, grammar, scientific process, life, problem solving, self-regulation skills, and cognitive, affective, and psychomotor skills were stated by a small number of participants with these names. Other effects that were not included in the figure were noted as positive effects related to communication skills, such as "contributions are provided to students' group consciousness, empathy development is positively affected, and students learn to respect each other".

Most of the participants implied that "the students' communication skills are positively affected". QUGS2 responded to the question, "What are the advantages of the peer-led team learning model?" as *"...other students in the group complement themselves and develop their social communicative skills because they support each other while learning."* Besides, IGS7 replied to the question, "Do the results of the competition affect the students?" with such words as *"I think it has positive effects. They will work harder in order to achieve more in a competitive environment, which means an increase in their academic success and in their communication skills."* The following excerpts were related to another positive effect with the highest number of participants (Students communicate more easily with their peers than their teachers): QGS20 answered the question "What are your suggestions for the use of the peer-led team learning model in lessons?" as *"I think it is significant for students to use it in lessons because they sometimes have difficulty expressing what they think is wrong or incomplete to the teacher, but they express themselves more freely in sharing their knowledge in the same environment with their peers"*. IUGS3 underlines that the model facilitates learning with such a statement as *"I think learning gets easier. We learn more easily with friends. When we are confused, we cannot ask the teacher so that the lesson will not be interrupted, or we are ashamed, but we learn more easily with our friends."*

As in other categories, this category also involves negative effects that are the opposite of positive effects. In three of the five negative effects, the participants implied conditions such as "if the leader is a student who is disliked by his peers; if the students behave in a way that offends each other; if there is a cynical attitude in the group". For instance, IGS6 stated that "Contribution is provided to the shy students' self-confidence." The same participant mentioned the effects of the model on the students' self-confidence with the words *"If they are afraid of their teacher or if there are shy students who do not communicate, they can establish better contact with the leaders and <u>improve their self-confidence</u>"*. As the opposite of this positive effect, GYLÖ5 announced the negative effect "Shy students' self-confidence may be adversely affected" while talking about the effects of the model on students' self-confidence with such words as *"...but as I said, this may damage students' self-confidence who are reluctant to talk to any passive friends and to share their thoughts with the teacher."*.

Findings on the Second Research Question

The second research question of the study was "What are the views of the fourth-year pre-service science teachers and science education master's program students regarding the effects of the PLTL model on peer leaders?". Findings about peer leaders are summarized in the following sub-headings, with comparisons to those related to peer students.

"Learning" Category

This category held 15 codes, 12 of which were positive and three were negative. Ten of the positive effects were also identified for peer students, and two were determined only for peer leaders. Those that were only related to the peer leaders were the unconditionally mentioned views: "peer leaders' spending more time than other students provides them with the opportunity to learn better" and "peer leaders' thinking activities improve". Most of the positive effects mentioned only for peer students were related to shy, slow learners, or unsuccessful students and had nothing to do with peer leaders. Upon comparing the positive effects on peer students and peer leaders in terms of the number of participants, some effects came into prominence for peer leaders. These are: the model will enable students to reinforce their knowledge, and the course success and knowledge of the students will increase.

All of the negative effects identified for peer leaders in this category were also among those determined for peer students. These negative effects on peer leaders were much less severe than on peer students, and fewer participants shared them. These codes were related to the view that "the students' learning or understanding of the subject becomes difficult, the efficiency of the lesson may decrease, and students may have misconceptions". The conditional sentences for these views were as follows: "If the students are reluctant, if the same model is used all the time, if the leader uses the direct instruction method, if the leaders are chosen incorrectly, if the teacher does not give feedback and corrections, and if the teacher cannot manage the process well".

"Motivation/Attitude" Category

28 codes were identified, 18 of which were positive and 10 were negative. All of the positive effects were those that were also observed in peer students. On the contrary, most of the six positive effects that were not identified for peer leaders but only for peer students were related to shy students.

Five of the 10 negative effects were also found in peer students. Five negative effects identified only in peer leaders were: "Leaders may have difficulty managing their groupmates or learning process; leaders' spending more time than their peers may negatively affect their motivation; it may not attract the attention of every leader; peers' negative behaviors may force leaders; leaders are reluctant to teach". Conditional statements for these negative views were "if they fail, if students cause problems, if there are disagreements between peer students and leaders, if the leader does not have all of the leadership qualities". Unlike the leader students, most of the negative effects found in peer students were related to shy or low-achieving students.

"Skill" Category

This category had 24 codes: 23 positive and one negative. 20 of the positive effects were also identified in peer students. Three positive effects only related to peer leaders were the views that "leaders' friendship develops, it contributes to the increase of leadership characteristics, and it contributes to the development of personal skills". Considering the positive effects that were not found in the peer leaders but only in the peer students, most of these effects were found to be related to shy students. In addition, some positive effects on peer leaders were more prominent than on peer students. These effects were expressed with such views as "students' awareness of taking responsibility develops" and "students' self-confidence improves".

The negative effect was expressed as "the model affects the students' self-confidence negatively", which was also determined for the peer students. Only the condition "if students act in a way that offends each other" was specified in order for this negative effect to emerge.

Result and Discussion

This study aims at exploring the views of the fourth-year pre-service science teachers and science education master's program students at a state university in Turkey regarding the effects of the use of the PLTL model in science courses on peer students and peer leaders. In this regard, the results revealed that the PLTL model could have positive and negative effects on the "learning", "motivations/attitudes" and "skills" of peer and leader students. Since the number of participants with positive effects identified in both questionnaire and interview data was much higher than the number with negative effects, much more participants agreed on positive effects.

When examining views on the positive effects of the PLTL model on students' learning, it becomes clear that participants believe that the implementation of this model will lead to improved learning outcomes. Specifically, they anticipate increased permanence, higher course achievement, greater course efficiency, and an easier understanding of the subject. Various studies were conducted at the university level to investigate the effects of the PLTL model on students' achievement in science subjects. In their study on biology and chemistry, Tenney and Houck (2003) concluded that the PLTL model increased achievement and that the interaction of peer students with leaders and each other helped them understand the subjects. Tien et al. (2002) examined the long-term success of students in an undergraduate organic chemistry course at a university in the United States of America and revealed that the success rate was more positively affected than the students who did traditional recitation. Similar results emerged in the studies conducted by Hockings et al. (2008), Lewis (2011), and Young and Lewis (2022). Eren-Şişman et al. (2018) compared the PLTL model with traditional teaching for general chemistry course achievement at a university in Turkey and found positive results, especially for low and medium-level successful students. In their study on university-level physics, Zorlu and Zorlu (2020) concluded that the students in the experimental group, in which the PLTL model was applied, had a more positive view of "the model encouraging active learning" than the control group. Though the numbers are fewer than at the university level, some studies demonstrated that the model could be implemented at the high school level (Cracolice & Deming, 2012), that it increases achievement in the ninth-grade chemistry subjects (Lamina, 2021), and that it increases achievement and conceptual understanding in the 11th grade biology subjects (Wells, 2012). Only one study has been found on science subjects with third-grade students at the primary school level. This study suggested that the achievement of peer students who witnessed the PLTL model increased significantly compared to the control group (Okeya, 2022). One study has been found to have been carried out on science subjects at the secondary school level. In this study conducted by Ahmed and Haji (2022) on science subjects with seventh-grade students, the PLTL model had no effect on the students' academic achievement. No such study has been published based on the PLTL model at the middle school level in Turkey.

As regards the participants' views regarding the positive effects of the PLTL model on the "motivation/attitudes" of the students, they emphasized particularly that the students' motivation will increase, their participation in the lesson will be positively affected, their attitudes towards the lesson/subject/teacher may

increase, their interest in the lesson will increase, they will be able to compete positively, and the lessons will be more fun. In their study conducted with university students on chemistry, Hockings et al. (2008) determined that the students participating in the PLTL model practices had a positive attitude towards the implementation of the model in the classroom, and they enjoyed sharing their ideas as well as participating in activities that ensured cooperation between them. Likewise, Wells (2012) found that high school students exhibited a positive attitude towards the implementation of the model in biology subjects. Tien et al. (2002) also noted that the model offered positive developments in university students' attitudes towards the course.

With respect to the positive effects of the PLTL model on the students' "skills", the participants indicated that students' skills such as communication, critical thinking, scientific process, psychomotor, and problem-solving skills would be positively affected. Unlike this result, Eren-Şişman (2020) implicated that the PLTL model did not contribute positively to the university students' social anxiety. In the study, it was stated that the students' inability to develop strong social skills may be among the reasons for this result. In addition, the study revealed that a learning environment could be created to improve the peers' social relations and skills with longer-term implementation of the practices and more experienced leaders. Erişmiş (2017) carried out an implementation similar to the PLTL model in the simple electrical circuit unit with the fourth-grade students and concluded that the students stated that the process provided ease of communication. Ahmed and Haji (2022) underlined that PLTL practices had a positive effect on developing students' teamwork skills. In their study on university-level physics, Zorlu and Zorlu (2020) found that the students in the experimental group, where the ALTÖ model was applied, had more positive views on "encouraging student-faculty member communication, encouraging cooperation among students, and respecting different abilities and learning styles" compared to the control group.

The effects mentioned above were generally positive and common to peer and leader students. In addition, various specific positive effects were identified for only peers or only leaders. Among the positive effects determined only for peer students, the ones that stand out mainly were related to shy, slow learners, and unsuccessful students. Examples of these effects are: "The learning speed of slow learners or unsuccessful students may increase; their learning may be easier; a more productive learning environment may be created for shy students; the model will increase the motivation of shy students; their participation in the lesson; their interest and attitudes towards the lesson; and shy students' communication skills will be positively affected; they can share their ideas more easily with the leaders; their shyness will decrease in the process; it will contribute to their socialization; and their self-confidence will develop". These views about shy, slow learners, and unsuccessful students are thought to be significant in the present study. There is a dearth of studies with similar results regarding the PLTL model (Tien et al., 2002; Hockings et al., 2008). In a study conducted in the United States of America related to PLTL practices in biology subjects at the university level, there was a drastic reduction in the failure rate of underrepresented minority students, which further resulted in closing the achievement gap between minority students and other students (Snyder et al., 2016). Similar results with regard to minority students at the university level emerged in various studies (Lewis, 2011; Tien et al., 2002). As for the positive effects identified only for the leader students, the participants affirmed that peer leaders' spending more time than other students provides them with the opportunity to learn better, the model increases the students' leadership characteristics, contributes to the development of their personal skills and self-development, and the leader status at the middle school level will have positive contributions for the leaders. Besides, this study suggested that some positive effects were more prominent in leaders than in their peers. These are: the model will enable students to reinforce their knowledge; students' success in the course or knowledge will increase; students' awareness of taking responsibility will develop; and their self-confidence will improve. These results are consistent with those in the relevant literature. Gafney and Varma-Nelson (2007) published that the PLTL model reinforced the breadth and depth of the leader students' learning, helped them develop personal qualities such as perseverance and confidence, and fostered teamwork and presentation skills. Snyder and Wiles (2015) confirmed that the model improved the critical thinking skills of peer leaders. In another study, the peer leaders reported enhanced problem-solving skills and understanding of basic concepts during the PLTL practices (Tenney & Houck, 2003). Similarly, Dreyfuss et al. (2021) announced that the use of PLTL enables leaders to become better problem solvers, to be more aware of their learning approaches, to develop better study habits, and to have confidence in their own lives. In addition, some studies, including those of peer leaders, found similar findings, although the PLTL model was not employed. Yardım (2009) stated that the most important cognitive effects of the method were that students learned while teaching, their academic success increased, and their problem-solving skills developed. Erişmiş (2017) examined the views of peers in the role of trainers about the process. Accordingly, the peers were determined to express positive views on various aspects such as increasing their self-confidence in the process, contributing to their self-awareness, taking responsibility, empathizing, active participation in the lesson, communication, information transfer, narration skills, and having fun.

Despite the positive effects mentioned above, the model may have negative effects on students in terms of learning, motivation, attitude, and skills. Gafney and Varma-Nelson (2008) stressed that the PLTL model requires a significant amount of student time and energy. In this vein, the participants stated that the leaders spend more time than necessary, which may cause a disadvantage. One of the views mostly expressed by the participants as a negative opinion was that the leaders might transfer false information. If leaders cannot be trained well in peer teaching, negative effects such as misinformation may occur (Karadağ, 2004: 49). As a solution to this situation, Karadağ (2004) advised that peer teaching methods be handled sensitively and well. Another view, which was more common than the others, was that students may have misconceptions. Participants believed that the model may create a misconception if the teacher makes the group arrangement wrong, if the leader is chosen incorrectly, or if the leaders have misconceptions. All of these conditions are actually related to the teacher's ability to manage the process. Therefore, the necessity of effective process management may be a significant suggestion for educators to eliminate this problem. The fact that the participants put forward conditions for many of the negative effects should not be underestimated. Hence, these conditional sentences are expected to shed light on educators.

Upon examining the possible positive and negative effects of the PLTL model, the positive effects were identified as valuable for the education process, and the negative effects may be eliminated or minimized. Various studies revealed the positive effects of the PLTL model on students' learning, motivation, attitudes, and skills, especially at the university and high school levels, which can be considered an indicator of the potential of the possible effects determined for the middle school level to go beyond probability. In this regard, the present results may help educators when they consider using the PLTL model in education and research processes.

Authors Contribution Rate
The authors contributed equally to the paper.

Conflicts of Interest
There is no conflict of interest for individuals or institutions in this research.

Ethical Approval
The Ethics Committee approval (04/12/2020-06/15) was obtained from Çanakkale Onsekiz Mart University for this research.

References

Ahmed, M. M., & Haji, S. J. (2022). The effectiveness of peer-led team learning (PLTL) in the achievement of seventh-grade students in the subject of science and developing their team working skills. *Journal of Arts, Literature, Humanities and Social Sciences*, 82, 145-175. https://doi.org/10.33193/JALHSS.82.2022.711

Akkurt, N. D. (2010). Aktif öğrenme tekniklerinin lise 1. sınıf öğrencilerinin öğrenme başarılarına ve çevreye yönelik tutumlarına etkisi. *Milli Eğitim Dergisi*, 40 (185),138-147. Retrieved from https://dergipark.org.tr/en/pub/milliegitim/issue/36199/407094

Akpınar, B., Batdı, V., & Dönder, A. (2016). Evaluating primary school students' motivation levels in science education in terms of gender and class variables. *Cumhuriyet International Journal of Education*, 2(1), 15-26. Retrieved from http://cije.cumhuriyet.edu.tr/en/pub/issue/4274/57559

Ayas, A. (1995). Fen bilimlerinde program geliştirme ve uygulama teknikleri üzerine bir çalışma: iki çağdaş yaklaşımın değerlendirilmesi. *Hacettepe University Journal of Education*, 11, 149-155. Rereived from http://efdergi.hacettepe.edu.tr/shw_artcl-1231.html

Birgili, B. (2022). *Yenilikçi öğretim yaklaşımları*. In Kamil Arif Kırkıç (Ed.), Yenilikçi okullarda öğrenme ve öğretim, (pp. 39-75). Efe Akademi.

Cracolice, M.S., & Deming, J. (2012). The Sky's the Limit: Learning through PLTL Teams at Big Sky High School. Peer-Led Team Learning: Implementation in High Schools. Retrieved from http://www.pltlis.org.

Chase, A., S Rao, A., Lakmala, P., & Varma-Nelson, P. (2020). Beyond content knowledge: transferable skills connected to experience as a peer-leader in a PLTL program and long-term impacts. *International Journal of Stem Education*, 7(1), 1-10. https://doi.org/10.1186/s40594-020-00228-1

Değerli, M. (2021). *The effectiveness of STEM approach in science education: A meta analysis study.* (Unpublished master's thesis). Dicle University, Turkey.

Drane, D., Micari, M., & Light, G. (2014). Students as teachers: effectiveness of a peer-led STEM learning programme over 10 years. *Educational Research and Evaluation*, *20*(3), 210-230. https://doi.org/10.1080/13803611.2014.895388

Dreyfuss, A.E., Fraiman, A., Montes, M., Hudson, R., Montalvillo Ortega, F., Muniz, J. Piefke, F., Rodriguez, M., Sheila, M., Vargas, K., & Vu, N. (2021). Peer leading small group discussion during covıd-19. *Advances In Peer-Led Learning*, 1, 55-67. https://doi.org/10.54935/apll2021-01-06-55

Eren-Şişman, N. E. (2020). *Implementation of the peer-led team learning (PLTL model to Turkish context: Its effect on undergraduate engineering students' academic performances and anxiety in general chemistry course.* (Unpublished doctoral dissertation). Middle East Technical University, Turkey.

Eren-Şişman, E. N., Ciğdemoğlu, C., & Geban, Ö. (2018). Investigation of the effect of peer-led team learning model on university students' exam achievement in general chemistry. *Bartın University Journal of Faculty of Education*, 7 (2), 636-664. https://doi.org/10.14686/buefad.412614.

Erişmiş, F. (2017). *The effect of using peer instruction method for the 4th grade simple electric circuit unit on the achievement and attitude of the students* (Unpublished master's thesis). Ağrı İbrahim Çeçen University, Turkey.

Eryılmaz, E. (2004). *The effect of peer instruction on high school students' achievement ano attitudes toward physics.* (Unpublished doctoral dissertation). Middle East Technical University, Turkey.

Gafney, L., & Varma-Nelson, P. (2007). Evaluating peer-led team learning: a study of long-term effects on former workshop peer leaders. *Journal of Chemical Education*, 84(3), 535. https://doi.org/10.1021/ed084p535

Gafney, L., & Varma-Nelson, P. (2008). *Peer-led team learning: evaluation, dissemination, and institutionalization of a college level initiative* (Vol. 16). Springer Science & Business Media.

Gosser, D. K., Cracolice, M. S., Kampmeier, J. A., Roth, V. Strozak, V.S., & Varma-Nelson, P. (2001). *Peer-led team learning: a guidebook*. Upper Saddle River, NJ: Prentice Hall.

Gosser Jr, D. K., Kampmeier, J. A., & Varma-Nelson, P. (2010). Peer-led team learning: 2008 James Flack Norris Award address. *Journal of Chemical Education*, 87(4), 374-380. https://doi.org/10.1021/ed800132w

Gülçek, N. (2015). *The effects of peer education on the candidate teachers' success of science in the subject of ideal gases.* (Unpublished master's thesis). İnönü University, Turkey.

Hockings, S. C., Deangelis, K. J., & Frey, R. F. (2008). Peer-led team learning in general chemistry: implementation and evaluation. *Journal of Chemical Education*, 85(7), 990. https://doi.org/10.1021/ed085p990

Karadağ Ö. (2004). Akran eğitimi eğitici eğitimi rehberi. Semih Ofset, UNFPA, Ankara.

Kıyıcı, G. (2004). Aktif öğrenme ve bilgisayar destekli öğretim. *Sakarya University Journal of Education*, 8, 28-32. Retrieved from https://dergipark.org.tr/en/download/article-file/115745

Kurt, U. (2020). *Comparison of the effects of different active learning methods on the teaching of 'Cell and divisions' and 'Force and energy' units.* (Unpublished doctoral dissertation). Atatürk University, Turkey.

Lamina, O. G. (2021). Peer-led team learning (PLTL), student achievement and engagement in learning chemistry. *International Journal of Quality in Education*, 5(2), 1-26. Retrieved from https://dergipark.org.tr/en/pub/ijqe/issue/62879/954527

Lewis, S. E. (2011). Retention and reform: An evaluation of peer-led team learning. *Journal of Chemical Education*, 88(6), 703–707. https://doi.org/10.1021/ed100689m

MoNE (Ministry of National Education) (2006). İlköğretim fen ve teknoloji dersi (6, 7 ve 8. sınıflar) öğretim programı. Talim ve Terbiye Kurulu Başkanlığı, Ankara.

MoNE (2013). İlköğretim fen bilimleri dersi (6, 7 ve 8. sınıflar) öğretim programı. Talim ve Terbiye Kurulu Başkanlığı, Ankara.

MoNE (2018). İlköğretim fen bilimleri dersi öğretim programı (ilkokul ve ortaokul 3, 4, 5, 6, 7 ve 8. sınıflar). Talim ve Terbiye Kurulu Başkanlığı, Ankara.

Merriam, S. B. (2015). Nitel Araştırma: desen ve uygulama için bir rehber [Qualitative research: A guide to design and implementation (Original book published 2009)]. S. Turan (Trans. Ed.). Ankara: Nobel Akademik Yayıncılık.

Njoku, M. I. A. (2020). Developing a positive attitude towards the learning of biology in secondary schools through peer led team learning strategy. *International Journal of Science and Research*, 9(4), 1330-1335.

Nobel, M. M. (2005). *Effects of classwide peer tutoring on the acquisition, maintenance, and generalization of science vocabulary words for seventh grade students with learning disabilities and/or low achievement* (Unpublished doctoral dissertation). Graduate School of The Ohio State University, Ohio.

Okeya, A. E. (2022). Effect of peer-led team learning approach on students' academic performance in basic science in Ekiti State Secondary Schools. *Commonwealth Journal of Academic Research*, 3(6), 1-9. http://doi.org/10.5281/zenodo.6863704

Olmscheid, C. (1999). "The Effectiveness of Peer Tutoring in The Elementary Grades". Retrieved from https://files.eric.ed.gov/fulltext/ED430959.pdf

Öncül, B. (2020). *Improvement of digital citizenship awereness of primary school students with peer learning* (Unpublished doctoral dissertation). Eskişehir Anadolu University, Turkey.

Özcan, O. (2017). *An action research towards teaching acids and bases to grade 12 students through peer instruction* (Unpublished doctoral dissertation). Atatürk University, Turkey.

Quitadamo, I. J., Brahler, C. J., & Crouch, G. J. (2009). Peer-led team learning: a prospective method for increasing critical thinking in undergraduate science courses. *Science Educator*, 18(1). Retrieved from https://ecommons.udayton.edu/dpt_fac_pub/45

Selvi, M., & Yıldırım, B. (2017). An experimental research on effects of STEM applications and mastery learning. *Journal of Theory and Practice in Education*, 13(2), 183-210. Retrieved from https://web.archive.org/web/20190430205637id_/https://dergipark.org.tr/download/article-file/299006

Sencar Tokgöz, S. (2007). T*he effect of peer instruction on sixth grade students' science achievement and attitudes* (Unpublished doctoral dissertation). Middle East Technical University, Turkey.

Snyder J.J., Sloane J.D., Dunk R.D.P., & Wiles J.R. (2016). Peer-led team learning helps minority students succeed. PLoS Biology, 14(3), e1002398. https://doi.org/10.1371/journal.pbio.1002398

Snyder J.J., & Wiles J.R. (2015). Peer led team learning in introductory biology: effects on peer leader critical thinking skills. PLoS One, 10(1), e0115084. https://doi.org/10.1371/journal.pone.0115084

Şimşek, Ö., & Yeşiloğlu, Ö. (2014). Akran Öğretimi Yönteminin Elektrik Kavramlarının Öğrenimi ve Bilimsel Süreç Becerilerinin Kazanımı Üzerine Etkisi. *Journal of Bayburt Education Faculty*, 9(2), 72-94. Retrieved April 11,2023 from https://dergipark.org.tr/en/pub/befdergi/issue/15929/167518

Tao, P. K. (1999). Peer collaboration in solving qualitative physics problems: the role of collaborative talk. *Research in Science Education*, 29(3), 365-383. https://doi.org/10.1007/BF02461599

Tenney, A., & Houck, B. (2003). Peer-led team learning in introductory biology and chemistry courses: A parallel approach. *Journal of Mathematics and Science: Collaborative Explorations*, 6(1), 11-20. https://doi.org/10.25891/6PGZ-J157

Tien, L. T., Roth, V., & Kampmeier, J. A. (2002). Implementation of a peer-led team learning instructional approach in an undergraduate organic chemistry course. *Journal of Research in Science Teaching*, 39(7), 606-632. https://doi.org/10.1002/tea.10038

Töman, U., & Yarımkaya, D. (2018). The effect of using peer instruction technique on the students' achivement levels in teaching 7th grade light topic. *Hitit University Journal of Social Sciences Institute*, 11(1), 499-514.

Tuzlukaya, Ş., Şahin, N. G. G., & Cigdemoglu, C. (2022). Extending peer-led team learning to management education: The effects on achievement, critical thinking, and interest. *The International Journal of Management Education*, 20(2), 1-11. https://doi.org/10.1016/j.ijme.2022.100616

Varma-Nelson, P. (2006). Peer-Led Team Learning. *Metropolitan Universities*, 17(4), 19-29.

Wells, T. (2012). *Peer-led team learning as an instructional strategy for secondary school science*. (Unpublished master's thesis). Brock University, Ontario.

Wilson, S. B., & Varma-Nelson, P. (2021). Implementing peer-led team learning and cyber peer-led team learning in an organic chemistry course. *Journal of College Science Teaching*, 50(3), 44-50. Retrieved from https://www.jstor.org/stable/27133098

Yardım, H. G. (2009). "*An action research upon the effect of peer tutoring on 9th grade students in mathematics lessons*" [Unpublished master's thesis]. Gazi University, Ankara.

Young, J. D., & Lewis, S. E. (2022). Evaluating peer-led team learning integrated into online instruction in promoting general chemistry student success. *Journal of Chemical Education*, 99(3), 1392-1399. https://doi.org/10.1021/acs.jchemed.1c01118

Zorlu, F., & Zorlu, Y. (2020). Investigation of the effects of a peer-led team learning instructional model (pltl) in teaching the simple electrical circuits subject on the seven principles for good practice. *Educational Policy Analysis and Strategic Research*, 15(3), 249-266. https://doi.org/10.29329/epasr.2020.270.12

Using Digital Tools to Improve Vocabulary in Fourth-Grade Primary School Students

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Using Digital Tools to Improve Vocabulary in Fourth-Grade Primary School Students

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Abstract

The purpose of this study was to improve the vocabulary of fourth-grade primary school students through action plans based on digital tools. The study was conducted within the framework of participatory action research design, one of the qualitative research approaches. The participants were 32 fourth-grade students from a public elementary school in Konya during the spring semester of 2023. The study started with a pre-test using Bulut's (2013) vocabulary test to assess the students' vocabulary levels. This led to the development of four action plans consisting of eight activities focusing on different fields of Turkish learning domains (listening, speaking, reading, and writing). These action plans were implemented over an eight-week period. Following the intervention, a post-test was conducted, and the pre- and post-test results were compared to assess the students' progress. Additionally, qualitative data, including observation notes, digital diaries, teacher and student interviews, video recordings, and research meetings, was analyzed to gain insight into the implementation process. The results indicated an improvement in students' vocabulary skills. The use of digital tools suitable for various learning domains and the incorporation of diverse text types in the activities fostered student engagement, enjoyment, and a comprehensive approach to vocabulary development. Furthermore, the implementation of group strategies positively influenced students' motivation and willingness to learn.

Keywords: Vocabulary, Turkish learning domains, Educational technology, Digital tools, Primary school students

Introduction

Vocabulary represents one of the most critical components of language development. The collective words that an individual knows, comprehends, and uses constitute their vocabulary (Akyol & Temur, 2013). As such, active vocabulary ought to be employed in both written and oral expressions in accordance with their meaning. Nonetheless, if the meaning is not fully understood or can only be inferred from the context, the words are part of the passive vocabulary (Yıldız et al., 2010). To ensure that vocabulary becomes a permanent part of one's knowledge, it is essential for the individual to actively use the acquired words. This process starts at an early age and is modulated by a plethora of factors.

Various elements, such as a child's environment, school experience, and family dynamics, influence their vocabulary development (Biemiller, 2006). Indeed, these aspects shape the lexicon that children acquire over time (Hoff, 2003). Notably, the vocabulary that a child acquires during and even before their elementary school years exerts a direct influence on their language abilities, reading comprehension, and consequently, their overall academic achievement (Marulis & Neuman, 2010). A substantial and diverse vocabulary is instrumental in facilitating children's reading comprehension (Dickinson, Golinkoff, & Hirsh-Pasek, 2010). Proficient vocabulary allows children not only to comprehend the content of the texts they read more effectively but also to establish connections across different texts. In a study by Ouellette (2006), it was found that the breadth and depth of elementary students' vocabularies directly influenced their reading comprehension skills. Similarly, Kayıran and Ağaçkıran (2018) identified vocabulary as a crucial determinant of reading comprehension. In essence, when children recognize and understand the words within the texts they read, their capacity to comprehend the overall text significantly improves. These findings provide critical insights for educators, suggesting that language teaching methodologies should incorporate strategies designed to broaden children's vocabulary.

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The extent of a child's vocabulary can critically influence their academic achievement (Snow et al., 2007). The successful acquisition of reading, writing, and other academic skills depends on the possession of an extensive vocabulary. Understanding the meaning of a word and using it appropriately in context can help children succeed at school (Stahl & Nagy, 2006). Additionally, a rich vocabulary can expedite the process of foreign language acquisition. Both national and international literature substantiate a robust correlation between students' proficiency and vocabulary in a foreign language and their native language vocabulary (Cunningham & Stanovich, 1997). The significance of vocabulary extends beyond mere academic achievement; it also bolsters children's social and emotional development (Crain, 1991). The more extensive students' vocabularies, the more effectively they can articulate their thoughts and emotions. Moreover, children with a comprehensive vocabulary may possess an enhanced ability to interpret the thoughts and feelings of others, fostering empathy and facilitating healthier social interactions (Rubin et al., 2006).

Given the crucial role vocabulary plays in language development, it is imperative for educators and families to implement strategies aimed at enriching children's vocabulary. Such strategies might encompass exposing children to texts of varying genres and complexity, engaging them in word games, and promoting the use of a diverse range of words in everyday conversations (Biemiller & Boote, 2006). Digital tools can also be employed in implementing these strategies, as technology has been widely acknowledged to play a significant role in language instruction and vocabulary development (Castek et al., 2012; Kervin & Derewianka, 2011; Neuman et al., 2011). Technology-supported strategies, compared to traditional vocabulary instruction techniques, can render children's vocabulary learning more efficient and engaging (Larson et al., 2012). Notably, multimedia and interactive learning applications facilitate the depiction of word meanings in multiple modes, thereby simplifying the learning process (Mayer, 2009; Segers & Verhoeven, 2009). The incorporation of technology in language learning can augment children's reading comprehension by providing them access to a wider vocabulary (Castek et al., 2012; Proctor et al., 2007). Research substantiates that technology plays a significant role in language teaching, enhancing students' vocabulary and language proficiency (Saka et al., 2014; Başal, 2015).

A host of technology-supported strategies can be employed to broaden the vocabulary of elementary school students. Digital tools can introduce an appealing dimension to children's language learning. For instance, digital storytelling empowers students to craft their own stories and present them in a digital milieu. This process can bolster vocabulary development by offering opportunities to delve into the meanings of words and incorporate them into their own work (Robin, 2008; Yang & Wu, 2012). Digital game-based learning strategies foster vocabulary learning and stimulate children's motivation (Hsu et al., 2008; Rabu & Talib, 2017; Zou et al., 2021). As children acquire new words and their meanings through games, they can also enhance their social skills (Kucirkova, 2014). Augmented reality (AR) technology provides a novel approach to language learning. By enriching vocabulary learning with diverse visual and auditory cues, AR applications can facilitate more effective word acquisition (Hsu, 2019).

This study can contribute significantly to the field by focusing on several distinctive aspects compared with existing literature. These unique features are as follows:

- Studies on primary school vocabulary focus on determining students' frequency of word use (Armut, 2019; Hildreth, 1953; İpek Eğilmez, 2010; Karadağ & Kurudayıoğlu, 2010; Ma & Mei, 2021; Ryder & Slater, 1988; Sealey & Thompson, 2004; Sever & Çetinkaya Özdemir, 2018), creating word lists for students (Keklik, 2011; Say et al. 2002), and identifying vocabulary in textbooks (Aru & Ertem, 2014; Harmon et al., 2000; Karadağ et al., 2005; Maden, 2020; Tragant et al., 2016). The studies aimed to identify the frequently utilized words by primary school students and determine their types and frequency in textbooks. In this study, texts appropriate for the fourth grade of primary school were selected with the joint decision of the primary school teacher, an expert faculty member, and the researcher. These selected texts are presently incorporated in the fourth-grade textbooks recommended by the National Education Ministry.

- While experimental designs are commonly used in studies to enhance the vocabulary of primary school students (Acat, 2008; Bulut, 2013; Çevik & Tosunoğlu, 2020; Maududi et al., 2018; Tanrıverdi, 2019; Tuğyan, 2010; Varan, 2017), there are lesser studies based on action research (Akram et al., 2022; Amalia, 2020; Demirci & Baş, 2016; Nazara, 2019). In this study, we prioritized the use of action plans tailored to accommodate students' learning needs. This approach addressed more effectively the learning needs that emerged during the process.

- In the studies for primary school level in the literature, vocabulary has generally been examined limited to one or a few learning domains (Anılan et al., 2011; Bulut, 2013; Çevik & Tosunoğlu 2020; Demirci & Baş, 2016; Duru, 2007; Hidayat & Yulianti, 2020; Karadağ & Kurudayıoğlu, 2010; Kultas & Ulusoy, 2022; Maududi et al., 2018; Özcan, 2020; Singil, 2008). In contrast, this study examined vocabulary development across all learning domains (listening, speaking, reading, and writing), thereby providing a holistic view of vocabulary acquisition.

- Studies on developing the vocabulary of primary school students generally use several text types in the literature (Çevik & Tosunoğlu, 2020; Demirci & Baş, 2016; Kultas & Ulusoy, 2022; Sever & Çetinkaya Özdemir, 2018), while studies involving three text types are less common (Anılan et al., 2011; Bulut, 2013). This study, however, used three different text types (story, informational, and poetry) to analyze student performance based on different text types.

- While most studies in the literature often employ only one or two instructional strategies (Göçer, 2009; Kultas & Ulusoy, 2022; Yıldırım, 2010; Varan, 2017), this study incorporated multiple instructional strategies simultaneously. This approach was aimed at enriching students' experiences and enhancing their engagement with classroom activities.

The purpose of this study was to improve the vocabulary of fourth-grade primary school students through action plans based on digital tools. In line with this overarching purpose, the study sought to address the following research questions:

1. What is the existing vocabulary levels of the fourth-grade students?

2. Through what types of action plans can the vocabulary of these students be improved?

3. What are the participant students' perceptions of the implementation process?

4. How have the implemented action plans influenced the students' vocabularies?

This article aims to enhance the vocabulary of fourth graders in primary school through the implementation of action plans that use digital tools. Current literature on vocabulary development concentrates heavily on experimental designs that explore a handful of learning domains and text types, thereby leaving a gap in the research. However, this article adopted a qualitative approach and addressed vocabulary across all learning domains. Various text types were used, and a substantial number of teaching strategies were employed, contributing to the article's unique perspective. The article will assist researchers in addressing vocabulary in a comprehensive manner, offering an instance of action research, and effectively integrating digital tools into lessons. For educators, it will supply concepts on teaching tactics that address all Turkish learning domains and employ technology efficiently. Ultimately, the techniques delineated in the article are expected to improve students' vocabulary.

Method

This study was undertaken using an action research design, a qualitative research paradigm that emphasizes implementation, collaboration, and discussion. This research design pivots around the researcher and practitioner discerning the root causes of existing problems and potential solutions (Norton, 2018; Yıldırım & Şimşek, 2021). Collaborative action research converges educators from schools and universities to tackle educational issues. The purpose of this approach is to ensure active participation by all stakeholders in the knowledge creation process and to transform research findings into actionable insights (Derince & Özgen, 2021; Gürgür, 2017; Mills, 2011). In this study, the primary school teacher and the researcher collaborated to enhance the vocabulary of fourth-grade primary school students. The action research process typically comprises a sequence of iterative and cyclical phases (Mertler, 2014; McNiff & Whitehead, 2010; Mills, 2011). The action research cycle implemented in this study is illustrated in Figure 1.
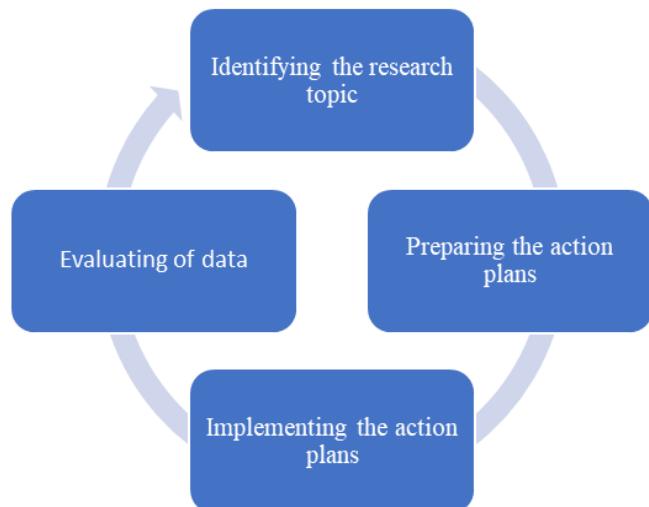
Figure 1. Action Research Process

Identifying the Research Topic

The initial step involves identifying a specific problem that researchers and other stakeholders are aware of or experiencing. This can be accomplished through a range of methods, such as a review of existing literature, observation of situations, or interviews with community members (Herr & Anderson, 2005). The focus of this study emerged when a primary school teacher (Teacher T.) informed the researcher of her students' deficiencies in reading comprehension. Both the researcher and the teacher agreed to comprehensively investigate the issue. Relevant literature was reviewed, field experts were consulted, and students' performance was analyzed in detail. Consequently, it was concluded that enhancing students' vocabulary would be an appropriate solution. This is because an extensive vocabulary facilitates text comprehension and interpretation, thereby enhancing the reader's ability to recognize words and their interrelations quickly and accurately (Stahl & Nagy, 2006).

Considering the researcher's prior experience and the relevance of the research topic, it was decided to employ an action research design for the study. Following the acquisition of the necessary ethical permissions, the aim was to become more familiar with the study group. The study group comprised fourth-grade students attending a public school in the Meram district of Konya, with 18 girls and 14 boys. Among the 32 students in the study group, 11 (7 girls and 4 boys) were foreigners. These are Syrian students who speak Turkish well enough to participate in classroom activities. Four students were excluded from the study due to irregular attendance. The school, situated in a moderately socio-economic area, has three floors and operates a full-day education program. It comprises 25 classrooms, a multipurpose hall, and a library. The classroom where the research was conducted was equipped with a smart board, a bookshelf, a printer, a teacher's desk and chair, three bulletin boards, and student desks and tables.

Preparing Action Plans

Following the identification and understanding of the problem, the process of action planning started. This typically involves discussions and dialogues regarding strategies and actions that can be put into effect to address the issue (Bargal, 2008). Preliminary action plans were devised based on the outcomes of the students' pre-tests, pertinent literature, the primary school teacher's input, and the insights of an expert faculty member. The primary school teacher's (Teacher T.) readiness to employ digital tools led to the inclusion of such tools in the action plans. The researcher and expert lecturer have asserted that Turkish learners can enhance their vocabulary across all learning domains. From a developmental perspective, listening vocabulary precedes speaking vocabulary, which is then followed by reading vocabulary and finally writing vocabulary (Snow et al., 1998). As individuals begin to employ these different forms of vocabulary in their daily lives, an overall vocabulary is developed. Following several meetings, it was agreed that the action plans should adhere to the framework of Turkish learning domains and that activities should be conducted with digital tools. Accordingly, activities were designed based on four draft action plans (listening-based, speaking-based, reading-based, and writing-based). The digital tools selected in relation to the learning domains underwent a final review before the weekly implementation. Figure 2 depicts the action plans and activities conducted during this study.
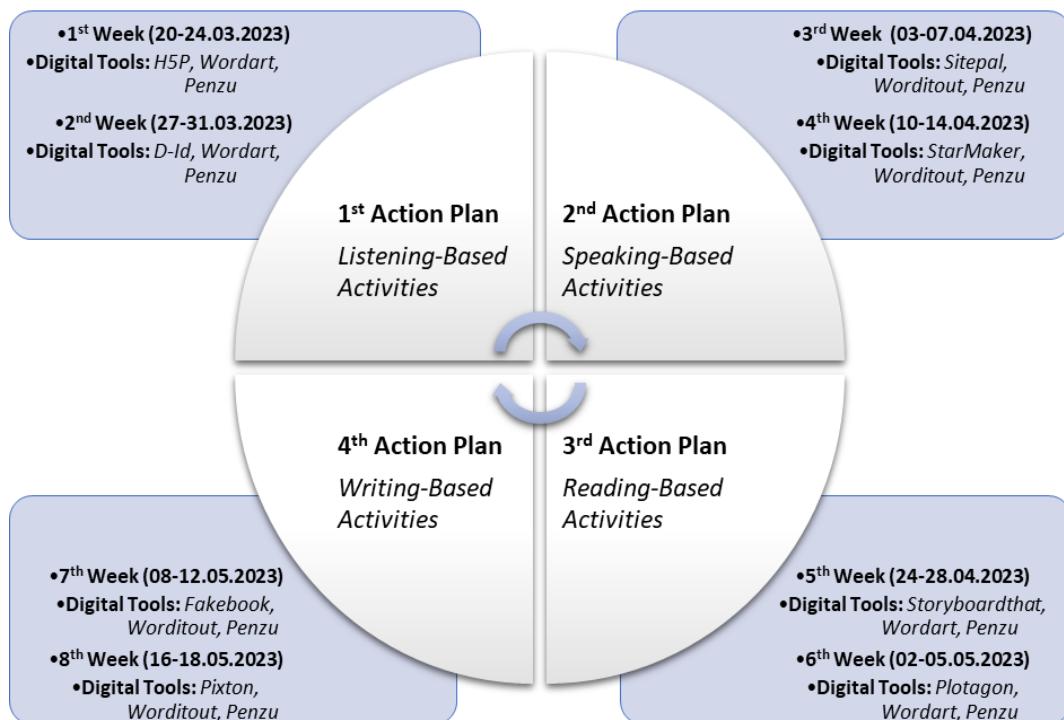
Figure 2. The action plan process of the research

Implementing Action Plans

Once action plans have been developed and approved, the process of implementation starts. This typically involves the execution of the plan over a specific period and the collection of data throughout this duration (McNiff & Whitehead, 2010). In this study, action plans were carried out by the teacher between 3/20/2023 and 5/18/2023, three days a week, during the fourth and fifth periods. Although the primary school teacher implemented all activities in the action plans, the researcher visited the classroom occasionally to conduct observations. Each action plan was carried out for 12 hours, culminating in 48 instructional hours. Before the implementation of the action plans, the primary school teacher and the researcher held meetings (at times face-to-face, at others online) to discuss the principles governing the execution of the plans. In particular, they repeatedly reviewed the use of digital tools. The classroom where the research occurred is equipped with smart boards onto which the Pardus operating system is installed. As some applications are challenging to operate on this system, digital tools were incorporated into the activities by running them on the teacher's computer and connecting it to the smart board.

Evaluating Data

The evaluation of practices typically involves analyzing and assessing the collected data. This evaluation informs the next phase of the research process and often kickstarts a new cycle of problem identification, action planning, and action implementation (Stringer, 2013). In this study, the activities implemented from the action plans and the collected data were analyzed and evaluated. Although action research aligns with the interpretivist paradigm, the positive paradigm's quantitative data collection techniques can be employed. Statistical analysis aids in understanding and interpreting the results derived from the action research process's quantitative data (Aslan, 2018; Karatay & Taş, 2021). Quantitative data were gathered with the vocabulary test (Bulut, 2013) to determine students' vocabularies in the pre- and post-test processes. The test developer calculated the average difficulty of the test as .59 (medium difficulty) and its reliability (KR-20 value) as .93. In this study, the average difficulty of the test was calculated as .57 and the reliability (KR-20 value) was calculated as .91. The Shapiro-Wilk test was used initially to determine if the groups' scores met the normality assumption. Based on the results of the test (Skewness = 0.14; Kurtosis = -.94; $p > .05$), it was observed that the data had a normal distribution ($p > .05$) (Tabachnick & Fidell, 2012). Quantitative data were analyzed using the Jamovi 2.3.21 statistical program, and the paired measures t test was employed to analyze students' pre-test and post-test results. Qualitative data were collected through observation notes, digital diaries, conversational interviews with teachers and students, video recordings, and research meetings.

Observation notes enable the researcher to document in detail the situations, events, people, and interactions encountered during fieldwork. These notes are subsequently used in the data analysis and interpretation processes. Observation notes assist the researcher in recalling their experiences and observations in the field, thereby enriching the research findings and providing more detail (Curry et al., 2009; Tong et al., 2007). Noteworthy points were noted as reminders throughout the research. The data from the observation notes was employed in creating action plans and interpreting the results.

A digital diary can serve as a tool for participants to document their experiences and thoughts. These diaries enable participants to record their experiences in real time, offering the researcher rich and detailed data (Janssens et al., 2018; Jarrahi et al., 2021). Throughout the research process, reflective diaries were maintained by primary school teachers, researchers, and students. However, these reflections were conducted using the digital tool Penzu. This digital tool provides an effective writing space for daily communication of feelings and thoughts. Students who had access to computers and tablets used these tools to write their diaries, while others accessed their family members' smartphones at home for this purpose.

Conversational interviews can be either unstructured or semi-structured. In such interviews, participants are given the freedom to express themselves, while the researcher may ask questions to gain in-depth clarification and understanding. Conversational interviews are typically conducted on an individual basis, although occasionally they can be conducted in group settings (Akman Dömbekci & Erişen, 2022; Polat, 2022). Throughout the research process, in conversational interviews with the students, open-ended questions were predominantly used to elicit participants' thoughts on the implementation of action plans. These interviews also sought feedback on the usefulness and interest of the class activities and participants' suggestions for additional activities to be implemented.

Video recording can be a potent tool in qualitative research, offering a wealth of data that can be thoroughly analyzed (Noble & Smith, 2014). Qualitative research captures the complexity of human behavior and experiences, and video recording facilitates this process (Neale et al., 2005). Throughout the research process, all classroom activities were recorded on video. The video recordings proved highly convenient for repeatedly examining various aspects such as the level of students' participation, their reactions, the effectiveness of teaching activities, classroom dialogues, and similar factors.

Research meetings played a crucial role in guiding the researcher during the design and implementation of action plans, identifying significant issues that may have been overlooked, and seeking solutions to challenges encountered. These meetings took place between the researcher and the primary school teacher, sometimes in person and sometimes online. Additionally, when necessary, a faculty member specializing in Turkish teaching was also involved in these meetings.

The qualitative data obtained in this study were analyzed using a systematic analytical approach proposed by Miles and Huberman (1994). This approach involved analyzing the data, relating them to the research questions, verifying the obtained results, and interpreting the findings. During this process, significant points were initially identified by carefully reviewing the video recordings following the completion of each week's action plans. Factors such as the successful implementation of action plans or encountering difficulties were considered at this stage. Subsequently, comments on the implementation of the action plans were subjected to detailed analysis using various data, sources such as observation notes, digital diaries, and conversational interviews. These methods facilitated a comprehensive understanding of the effectiveness of the action plans, participants' experiences, and potential areas for improvement. The study's qualitative data and analyzed findings were reviewed by a faculty member with expertise in qualitative research methodology. The expert's correction and recommendation guidelines were used to structure the study's findings.

To ensure the robustness of the research, various methods such as the research cycle, field observation, researcher experience, member supervision, and data triangulation were employed (Gürgür, 2017; Ocak & Akkaş Baysal, 2020). This study emphasized the weekly cycle of the action plan and provided detailed descriptions of the included activities. Observation notes were used to enhance the comprehensibility of the research process. By increasing transparency and reproducibility, observation notes enable the researcher to furnish detailed information about the research process, thereby facilitating other researchers in replicating the same or similar studies (Keith et al., 2017; Neale et al., 2005). The fact that the researcher conducted his Ph.D. study using an action research design in the field of Turkish language teaching helped mitigate potential adverse situations that could have arisen during the research. Meetings conducted before and following the weekly implementation of the action plans ensured comprehensive management of the research in all aspects. The use

of a wide array of data collection tools (pre- and post- test applications, video recordings of action plans, observation notes, digital diaries, chat-style interviews) provided a diverse and rich source of data.

Results

The general structure of the results section in this study, which aimed to enhance the vocabulary of fourth-grade primary school students through action plans based on digital tools (web tools), is illustrated in Figure 3.
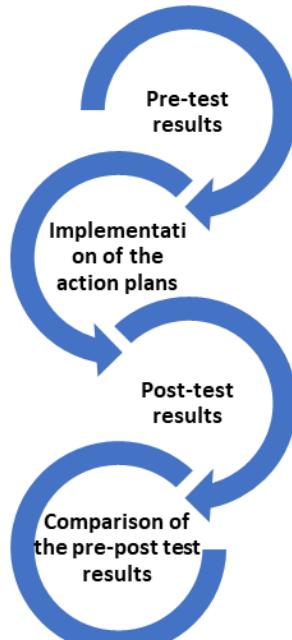

Figure 3. The general structure of research results

Figure 3 demonstrates that the discussion begins with the presentation of the pretest results (addressing the first research question). Subsequently, the opinions of the researcher, primary school teacher, and study group regarding the action plans and the activities derived from them are discussed (addressing the second research question) along with the implementation of these action plans (addressing the third research question). Finally, the post-test results will be presented, and a comparison will be made between the pretest and post-test results (addressing the fourth research question).

Pre-test Results

The pre-test was conducted on March 15, 2023, as part of the study. The students in the study group were given two class periods for pre-test measurements. During this process, any unclear items in the data collection instrument were explained to the students. Table 1 displays the results of the pre-test, which reflect the current vocabulary level of fourth-grade students.

Table 1. Pre-test results on students' vocabularies

	N	$\overline{X}$	Minimum	Maximum	Sd
The study group	32	60.01	38	76	10.1

According to the data presented in Table 1, the mean vocabulary score for the students in the study group was 60.01. The vocabulary measurement form ranged from a minimum score of 38 to a maximum score of 76. Before the administration of the pre-test, the students were reassured that the exercise was not an exam and were encouraged to approach it calmly. One student's reflection on this process was recorded in Penzu as follows:

> "I felt excited before I began solving the test given by our teacher. However, my teacher assured me that this was not an exam, which helped alleviate my anxiety. He explained that it was simply an activity. As a result, I could focus better while reading the questions. In the afternoon class, we answered different sets of questions..." (Student 15, Girl, 16.03.2023).

Implementation of the Action Plans

Four action plans and a total of eight activities under these plans were implemented within the scope of the research purpose. Action plans and their activities are discussed below in the order of their implementation.

1ˢᵗ Action Plan: Listening-Based Activities

The objective of this action plan was to enhance students' vocabulary through listening activities that involved discerning words with unfamiliar meanings. *During the first week of this action plan*, the researcher played the poetic text *Yavru Ahtapot Olmak Çok Zor* (It's Hard to be a Baby Octopus) for the students. Following the listening session, the words that students were unfamiliar with were documented using the digital tool Wordart, and the students were then prompted to guess the meanings of these words. Subsequently, the researcher presented a video prepared for the poetic text using the H5P digital tool. This tool enables the creation of interactive video content. Within the video, various question-based activities were integrated at specific timestamps, allowing students to engage in the activities when prompted. The appropriate features for this purpose, such as Add Text, Add Short Answer Questions, Add Single Choice Questions, and Add Multiple Choice Questions, could be selected. When the designated timestamp was reached, the question or text of interest could be entered in the corresponding field. Further customization options included determining whether to pause the video and specifying the duration of the interaction on the screen. As the students watched the video, they also completed the activities that were embedded within it. The successful completion of these activities required careful listening to the poetic text. Following this exercise, the words recorded in the Wordart digital tool were projected onto the screen. This tool allowed students to edit the words, selecting desired shapes, fonts, layouts, and styles. This was done to increase students' interest and encourage them to share the meanings they had guessed for the words. The primary school teacher expressed his enthusiasm and observations regarding the first week of the action plan in his diary entry:

> "We started the first week of the study, and although I did not show it to the students, I was more excited than they were. I was curious to see their reactions as they engaged in activities prepared using digital programs. While I typically use Web 2 tools, this time they took center stage. While some students readily participated in the activities, I had to try to encourage others to engage." (Teacher T., 22.03.2023)

One student's reflection highlighted the importance of the listener paying attention and taking notes while listening:

> "We started doing activities on the computer. In the activity where we watched the poetic text on the screen, the video asked us questions by stopping in between. At first, I did not pay full attention, so I could not answer. But in the following questions, I always followed the video well and listened. Sometimes I took short notes. In fact, our teacher always told us this. But this time I understood what he meant." (Student 4, Girl, 21.03.2023)

In the second week of the action plan, the teacher read the *Bayrak* (Flag) poetic text multiple times in a clear and emphatic manner in the classroom. Words with unknown meanings were immediately recorded. Afterwards, the students were shown an audio recording of the poetic text created using the D-id digital tool. This tool allows the use of virtual avatars to voice characters, with options for different languages and genders. The program enables the avatars to have lip and facial movements that align with the content of the text, and the output is in video format. The students watched the video of the recitation of the poetic text prepared in this way, with words of unknown meanings recorded in the previous lesson displayed in the digital tool Wordart. The students then guessed the meaning of these words. In the final lesson, students who had read the poetic text clearly and emphatically had their voices recorded. These recordings were uploaded to the selected avatar in the D-id program and played back to the students. The students were divided into groups, with each group assigned a different stanza to read, and they were asked to vocalize it using different characters in the digital tool. The students evaluated the vocalizations they heard through a group evaluation form. It was observed that students who listened to their own voice through the chosen avatar became aware of the comprehensibility of the content they were listening to. This was reflected in their diary entries:

> "It was nice to create my own virtual character. It was very exciting to listen to the poetic text in my voice in class. Now I know what I have to pay attention to to make the poetic text understandable." (Student 15, Girl, 31.03.2023)

"I enjoyed this week's activity. We had the avatar we created with our teacher read poetic texts in our own voices, and we listened to them. While listening, we noticed that some of our friends read the poetic texts much more beautifully." (Student 28, Boy, 01.04.2023)

The researcher, who was present in the classroom as an observer, made the following observation regarding the second action plan and suggested points to consider in order to encourage more active student participation:

"The purpose of the activities should be better explained, and we should make the students more actively involved. To achieve this, we can make them integral parts of the activity." (Observation note, 30.03.2023)

2nd Action Plan: Speaking-Based Activities

The objective of this action plan was to enhance students' vocabularies through conversation-based activities. *In the first week of this action plan*, the text *Kar Taneleri Biliminin Tarihi* (History of the Science of Snowflakes) was narrated to the students by a virtual character from Sitepal. The topic was subsequently discussed in the classroom with the teacher. Sitepal is a digital tool that allows the selection of 2D and 3D virtual characters or the creation of original characters using uploaded images. The character's appearance, including hair structure and color, visible facial features, choice of accessories, and clothing, can be customized based on the selected or created character's structure and gender. A suitable background can also be chosen. Real or virtual characters can be made to speak by typing text into the digital tool, recording audio using a computer microphone, making a phone call, or uploading a pre-recorded voice file. Through this digital tool, conversations between different virtual characters, prepared in advance to reflect various perspectives using the six-hat thinking technique, were conducted on the topic of the *Impact of Technology on Our Lives*. Words that were not understood during these conversations, particularly words with unknown meanings, were transferred to the Worditout digital tool and displayed on the screen. Students were asked to guess the meanings of these words based on context and then look up the dictionary definitions. Following this, the students formed groups of six, and each group selected a topic for conversation. Special attention was given to incorporating newly learned words into their speeches. The students prepared speeches on their chosen topics using the six-hat thinking technique. The teacher taught the students this technique by using the speeches of different virtual characters on Sitepal. Each student represented one of the six hats: white hat (neutral), red hat (emotional), black hat (pessimistic), yellow hat (optimistic), green hat (creative), and blue hat (conclusive). Audio recordings of the students' speeches, based on the color of the hat they chose, were made and uploaded to the avatars along with their visuals. These speeches were listened to in the classroom in the order of the groups, and students were evaluated using the Speech Peer Evaluation Form. Active participation was observed in this activity. The primary school teacher provided the following reflection on the matter:

"Although it took some efforts to get students to understand the six-hat technique, I appreciated the willingness of my students during the application. I noticed that some of my students had a talent for role-playing. S12E, in particular, used tone of voice and emphasis intonation exceptionally well. I plan to incorporate this technique into my teaching frequently in the coming years." (Teacher T., 09.04.2023)

The diary entries of S12E, who excelled in the activities during this week, are as follows:

"It was enjoyable to assume different personalities this week. I enjoy imitating others, and I had the opportunity to do so in class. My teacher allowed me to upload my own photo to my virtual character, and when my friends saw it, they really liked it." (Student 12, Boy, 08.04.2023)

In the second week of the action plan, the teacher delivered a speech about April 23rd, National Sovereignty Day, and Children's Day. Background music was played during the speech, and the difference between the speech with and without music was discussed with the students. Key words related to the topic (such as national sovereignty, parliament, full independence, and Children's Day) were displayed on the screen using the Worditout digital tool, and their meanings were explored. This tool allows for the selection of different fonts, text and background coloring, text alignment, letter sizing, and word frequency determination. The students were instructed to come prepared to read a poetic text about April 23rd, National Sovereignty Day, and Children's Day in the next lesson. During the lesson, the students' poetic texts were recited with background music using a karaoke microphone. Words with unknown meanings in these poetic texts were identified, and students were asked to guess their meanings using Worditout. The lyrics of the children's song *Atatürk Çocukları* (Atatürk's Children) were distributed to the students, who were then asked to read them aloud.

Subsequently, the students listened to the song and were encouraged to sing it into the microphone using the StarMaker karaoke application. Each line of the song was sung by a different student, with the entire class joining in the chorus. A Worditout digital tool was used to identify unknown words in the song and find their meanings. All students enthusiastically participated in this karaoke activity. The students' sentiments on the topic were recorded in their diaries:

> "The music activities were very enjoyable. We read poetic texts, learned new ones, and sang the children's song. It was a fantastic day for me." (Student 9, Boy, 14.04.2023)

> "My teacher's speech was very moving, especially with the background music. I recited the poetic text *Bu Vatan Kimin?* (Who Owns This Homeland?) with the music playing. The song *Atatürk Çocukları* (Atatürk's Children) in the last lesson was wonderful. I felt both emotional and entertained this week." (Student 19, Girl, 14.04.2023)

The researcher who observed the classroom activities made the following note regarding the students' participation and the next action plan:

> "The participation in the second action plan was much better. The topics we emphasized in the meeting with the primary school teacher at the end of the first action plan seem to have been effective. However, to fully engage the students in the activities, they need to thoroughly understand the application of the digital tools. In our upcoming action steps, the teacher should introduce the digital tool more effectively and provide examples to ensure active student involvement." (Observation note, 07.04.2023)

3rd Action Plan: Reading-Based Activities

The objective of this action plan was to enhance students' vocabularies through reading-based activities. *During the first week of this action plan*, the students received a text titled S*ağlıklı Beslenme* (Healthy Eating) and were instructed to read it silently and make note of any words whose meanings they did not know. Subsequently, a cartoon version of the text was distributed to the students using the Storyboard digital tool. This tool allows for selecting appropriate backgrounds and characters for the content and enables the addition of text with speech bubbles. External images can also be incorporated if needed. Storyboard that allows for the individual download of finished cartoons, sharing on social media, conversion into a GIF (Graphic Interchange Format) or presentation file, and direct printing of the storyboard. The text prepared with this digital tool was read aloud to the students once. Then, the students were divided into groups (six groups) according to the number of paragraphs in the text. Each group read their assigned paragraph aloud together in unison. This process continued until the entire text was completed. After the reading, the content of the text was discussed, and the students were asked if they were able to find the meanings of the words they initially did not know. These words were then transferred to the Wordart digital tool and projected on a board. Some of the projected words' meanings were guessed, while others were looked up in the dictionary to complete the process. Students who enjoyed reading with the Wordart digital tool shared the following in their diaries:

> "Our teacher first asked us to read the text normally. Then he had us read the cartoon version with lots of pictures. Both versions were beautifully illustrated, and it was enjoyable to read the illustrated version. My friends and I tried to read more expressively so that we would stand out when reading as a group. I used to find reading boring before, but I really enjoyed it during this activity." (Student 21, Girl, 28.04.2023)

One student's reflection emphasized the anticipation for the next activity, as the activities in the action plans have been captivating:

> "We engage in more fun and different activities with our teacher every week. We had a great time as a class. When it is time for these lessons, I feel excited to see what kind of work we will do this time." (Student 16, Boy, 27.04.2023)

In the second week of the action plan, the teacher provided the story text *Kim Korkar Kırmızı Başlıklı Kızdan?* (Who's Scared of Little Red Riding Hood?) to the students, instructing them to read it silently and make notes of any words whose meanings they did not know. Subsequently, an animation prepared beforehand using the digital tool Plotagon was shown to the students. Plotagons enable the creation of fun animation by selecting scenes and characters based on the content of the subject. The characters in the story can be made to speak

through the program, and external sound files can also be added. After watching the animation a few times, characters from the story were assigned to the students, who then read their assigned parts aloud following the progression of the text. Next, the students went to the blackboard and performed a reading theater using the appropriate tone of voice, gestures, and facial expressions. This activity cultivated the habit of reading with emphasis and intonation that aligned with the content of narrative texts. Subsequently, the students were asked to guess the meanings of the words they had initially noted based on the context of the story. These words and their meanings were projected on the screen using the Wordart program, and their meanings were discussed one by one. In this second activity of the third action plan, it was observed that the students were able to guess the meanings of previously unknown words more easily after the activity. The primary school teacher noted the following in his diary:

> "Participation in this week's activities was good. I noticed that my students could guess the meanings of unknown words quicker than in previous weeks. The story was read while following the animated video. Then, a reading theater was conducted. All of these activities helped the students understand the story better and guess the meanings of the words more easily." (Teacher T., 05.05.2023)

One student reflected on the importance of stress and intonation in reading:

> "Our teacher always reminded us to pay attention to our tone of voice while reading the story. He suggested that we read using a tone of voice appropriate to the story. We realized the significance of this when we read the animated video in class. We understood it even better when we acted out the story on the board." (Student 23, Girl, 05.04.2023)

Before the final action steps, the researcher who observed the classroom as an observer made the following note to encourage more active utilization of words with unknown meanings:

> "In each main activity, we identified words with unknown meanings that appeared in the texts used, using digital tools. In the last lesson, these words were practiced with digital tools such as Wordart and Worditout. However, our main objective is to enable students to actively incorporate these words into their vocabulary. Therefore, in the final action plan, it would be beneficial to include these words in writing activities. We should discuss this in the meeting with Teacher T." (Observation note, 05.05.2023)

4th Action Plan: Writing-Based Activities

The objective of this action plan was to enhance students' vocabularies through writing-based activities. *In the first week of this action plan*, the informative text *İstiklal Marşı Şairi* (Poet of the Turkish National Anthem) was distributed to the students, who were instructed to read it silently and make note of any words whose meanings they did not know. The text provided information about the life of Mehmet Akif Ersoy. Following this, the profile of Mehmet Akif Ersoy, created using the digital tool Fakebook, was projected onto the screen for the students to examine. Fakebook is a digital tool similar to a social media application. By entering the name of the person, their profile photo is automatically generated. Information such as the date and place of birth, date and place of death (if deceased), and names of family members can be added, along with the names and profile photos of friends. Messages containing important moments of the person's life can be created, as can messages from friends on the person's page. Comments can be added below the messages to further explore the person. A background image can also be set as the profile picture. The created profile can be shared digitally or printed directly. The following day, the students were divided into groups and tasked with researching and writing about individuals they shared with, such as Aziz Sancar, Aşık Veysel Şatıroğlu, Mozart, and Leonardo da Vinci. In the lesson, the students used their notes to create social media profiles for these individuals using the Fakebook digital tool. Throughout this process, the students independently created profiles based on their research. In the final lesson, words with unknown meanings were projected onto the board using the digital tool Worditout. The activity concluded with the students guessing the meanings of these words and conducting further research using dictionaries.

Teacher T., who found the Fakebook digital tool highly functional, reflected in his diary as follows:

> "The Fakebook program suggested by Teacher Mehmet was a brilliant idea for this activity. Allowing the students to create their own Fakebook profiles instead of simply researching and writing about individuals was very effective. The students remained engaged and, at the same time, gained a better

understanding of the characteristics of the person they were researching. Overall, I believe we had an impressive lesson." (Teacher T., 12.05.2023)

The reflections from students who found the use of the Fakebook digital tool effective in texts describing the lives of important individuals and in activities requiring students to research about these individuals are as follows:

"We read about the life of Mehmet Akif Ersoy multiple times and identified words whose meanings we did not know. I thought there would be no activity this time, but our teacher surprised us by creating a Fakebook profile for this person. We explored his life on his profile and read his posts. It helped me understand his life better. That is how our teacher kept us engaged." (Student 2, Girl, 09.05.2023)

"Before class, my friends and I researched Aziz Sancar's background. I even downloaded his profile picture. In class, we had a lot of fun creating a Fakebook profile for him. We could make posts in his voice and write comments below them. It allowed us to share what we learned during our research humorously." (Student 25, Boy, 12.05.2023)

In the second week of the action plan, a list of words with unknown meanings that had been noted until that point was compiled and displayed on the board. It was announced that a story-writing activity would be conducted using these words, with the story being written on the digital tool Pixton and transformed into a comic book. The teacher presented the comic book he had prepared on the board, introducing the program and having the students read it. Pixton is a digital tool that allows teachers to create online lessons for students to create comic books by designing settings and characters. The tool also includes assessment features. After registering the students in the digital classroom, the topic of the story was discussed and decided upon with their input. The brainstorming method was used to generate ideas about what should be included in the story. The characters were then determined, followed by the establishment of the time and place. The storywriting process began with an emphasis on incorporating the words from the list of unknown words. The first story was collaboratively created by the entire class under the guidance of the teacher. Appropriate settings and characters were created, and speech bubbles for the characters were written to introduce the story's initiating event. The story was reviewed multiple times during the lesson, and at the end, it was read aloud to the students. For the next lesson, the students were asked to create their own comic book using the digital tool before coming to school. Students without internet access at home were provided with pre-prepared comic book printouts with blank speech bubbles. These students could fill in the printouts as desired while still being encouraged to incorporate words from the vocabulary list. In the final lesson, the students shared their comics with the class, and the comics were read and corrected. At the end of the lesson, self-assessment forms were distributed to the students to evaluate their writing performance. Through this activity, students began to discover the joy of writing. One student expressed their thoughts on this in their diary:

"Writing activities in the classroom were always the same. We usually just finish a story or come up with a title. Sometimes we write about our thoughts on a topic. But this time, we created characters and settings that matched the theme. We wrote based on the visuals. We turned it into an illustrated novel. I never felt bored while writing; in fact, it was quite enjoyable." (Student 31, Girl, 18.05.2023)

Post-test Results

After observing the progress in his students' vocabulary development throughout the research process, Teacher T. informed the researcher that he felt it was no longer necessary to continue with in-class applications. Consequently, a joint decision was made to administer the posttest. The researcher noted the following observation regarding this:

"In the writing-based action plan, it was evident that the students were incorporating words emphasized previously. Teacher T. expressed her delight with the comic books created by her students, saying, 'My little writers bring me joy.' He mentioned that he witnessed noticeable progress in the final activity. During the evaluation meeting for this action plan, we will discuss whether to proceed with a new action plan or proceed with the post-test." (Observation note, 18.05.2023)

The post-test for the study was conducted on May 22, 2023. The students in the study group were given two class periods for post-test measurements. The students were provided with an explanation of unfamiliar aspects of the data collection tool used in this process. The post-test results, which indicate the current vocabulary level of the fourth-grade students, are presented in Table 2.

Table 2. Post-test results on students' vocabularies

	N	X̄	Minimum	Maximum	Sd
The study group	32	71.1	46	96	12.1

According to Table 2, the average vocabulary score of the students in the study group was 71.22. The lowest score on the vocabulary measurement form was 45, while the highest score was 88.

Comparison of the Pre-Post Test Results

The comparison of pre- and post- test scores is shown in Table 3.

Table 3. The comparison of pre- and post- test results on students' vocabularies

	N	X̄	Sd	t	p
Pre-test	32	60.1	10.1	11.7	0.001
Post-test	32	71.1	12.1		

According to Table 3, there is a statistically significant difference in the students' vocabulary pre-post test scores in favor of the post-tests [$t(31)=11.7$, $p<0.01$]. This indicates that the action plans implemented in the study were effective in developing the students' vocabularies. The average vocabulary of the students improved from 60.1 before the research to 71.1 at the end of the research.

In addition to these quantitative results, the qualitative data obtained in the research showed that the action plans implemented were generally effective in developing students' vocabulary, and the students willingly participated in these activities. Some students expressed their opinions on this matter, such as:

> "I enjoyed participating in the activities in these lessons. Although it took me some time to get used to them in the first week, I became more comfortable with the activities afterward. It was nice to have two teachers in our class. I felt like we were a special class." Student 3, Boy, 22.05.2023

> "We did a lot of different activities in class. I had a lot of fun. I even looked forward to the days when these lessons would occur. Playing games, reading poetic texts, singing songs, creating cartoons, writing comics, and becoming a writer were all very enjoyable experiences." Student 22, Girl, 22.05.2023

The primary school teacher also reflected on the overall evaluation of the teaching activities implemented in the research:

> "What started as a conversation with teacher Mehmet about improving my students' reading comprehension turned into a practical application. Through this study, I have gained a better understanding of the importance of vocabulary in human life. Although I had previously used web tools in my classroom, I have learned to use them more effectively. Designing and implementing activities based on web tools that cover all areas of Turkish language teaching contributed greatly to my students. They had fun and actively participated in the activities while simultaneously achieving our goals." Teacher T., 23.05.2023

Conclusion and Discussion

The purpose of this study was to improve the vocabulary of fourth-grade primary school students through action plans based on digital tools. The results of the study indicate that the activities implemented in the action plans, which used digital tools, were effective in developing students' vocabularies. Numerous studies have emphasized the potential of digital technologies in enhancing vocabulary learning (Chun & Plass, 1996; Godwin-Jones, 2010; Hwang et al., 2016; Kırkgöz, 2011). Multimodal approaches and interactive features offered by digital tools have been shown to significantly contribute to vocabulary learning (Mayer, 2005; Mayer & Moreno, 2003; Paivio, 1991). Online activities provide opportunities for expanding students' vocabulary knowledge (Akkoyunlu & Yılmaz-Soylu, 2008).

The results of this research also emphasize the significance of providing students with clear explanations regarding the purpose, stages, and anticipated outcomes of classroom activities before they are implemented. This practice aligns with constructivist learning theory (Bruner, 1996; Piaget, 1973; Vygotsky & Cole, 1978)

and the principles of transparency in education (Wigfield & Eccles, 2000; Wiggins & McTighe, 2005). By providing students with a clear understanding of the activities, their expectations are better addressed, leading to increased motivation and willingness to participate (Brophy, 2013).

Active participation of students in activities has been observed to enhance their understanding of new vocabulary. Making activities engaging and enjoyable further promotes active participation. Fun and interactive learning experiences facilitate deep and effective learning (Gee, 2003; Prensky, 2001; Resnick, 2004). The use of digital tools in this research contributes to creating such experiences. Digital technologies offer effective means to provide engaging learning environments (Merchant, 2012). In related literature, digital environments and technological tools have been found to have a positive impact on participation in language education studies (Kukulska-Hulme & Shield, 2008).

Engaging students in the activities of the action plans not only promotes active participation but also enhances their retention of vocabulary over a longer period of time. By adopting a student-centered approach, in line with constructivist learning theory, students take responsibility for their learning experiences (Piaget, 1973; Vygotsky & Cole, 1978). This student-centered approach allows for deeper learning and better comprehension (Hmelo-Silver et al., 2007). In this study, students demonstrated their performance and assumed different responsibilities during the implementation of activities related to digital tools, fostering their active engagement in the learning process.

Unlike many studies that often focus on a single learning domain or a few learning domains for vocabulary instruction (Anılan et al., 2011; Bulut, 2013; Çevik, 2011; Demirci & Baş, 2016; Kultas & Ulusoy, 2022), this study developed students' active vocabularies across all learning domains. Addressing multiple learning domains increases the opportunity to cater to students' individual abilities and learning styles (Gardner, 1983; Sternberg, 2003). This approach enriches students' learning experiences and enhances their vocabulary development more effectively. Each of the four action plans in this study specifically targeted different learning domains and employed appropriate digital tools for engaging activities.

The use of digital tools in activities related to the listening domain effectively engaged students in active listening processes. The H5P digital tool, used for creating interactive videos in this study, encouraged students to listen attentively in order to successfully complete the activities embedded in the videos. Literature suggests that employing the H5P digital tool can improve students' listening skills and provide meaningful learning experiences (Dhini & Ardiasih, 2021). The interactive features of this digital tool are particularly effective in teaching new vocabulary and verbs to students (Prades-Yerves, 2022). Various studies have emphasized the capacity of digital tools to enhance listening skills (Chinnery, 2006; Vandergrift & Goh, 2012). Additionally, it was observed that students took notes while listening, further supporting their active engagement in the listening activities.

Indeed, engaging students in speaking activities through the use of digital tools provides them with active engagement in the learning process, leading to more willing participation and increased accuracy in using vocabulary. In this study, students used the digital tool Sitepal to create virtual characters and deliver prepared speeches using the six-hat thinking technique. This level of control over their own speech allowed students to effectively incorporate vocabulary words into their speeches and pay attention to tone of voice and emphasis. Digital platforms focused on vocalization have proven to be beneficial in foreign language learning (Jiang et al., 2022), and text-to-speech programs like Sitepal offer an effective way for students to grasp vocabulary through dictation (Chiang, 2019). The role of digital technologies in developing speaking skills has been widely reported in the literature (Blake, 2013; Warschauer, 1996; Golonka et al., 2014).

When reading texts in a digital environment using various reading techniques, students demonstrate faster comprehension of vocabulary. Digital technologies offer numerous methods and techniques designed to improve students' reading skills (Saine, 2012; Korat, 2010). In this study, the Plotagon digital tool was used for the reading theater technique, creating an animated environment where students read the dialogues of selected characters. By focusing on correct pronunciation, stress, and intonation while reading, students were better able to infer expressions from the contextualized dialog. Literature highlights Plotagon as a pedagogical tool that contributes to students' vocabulary development and provides a meaningful and enjoyable learning environment (Faradisa, 2021). Studies in the literature indicate that the use of digital tools in the reading process positively contributes to students' vocabulary learning, reading comprehension, and willingness to participate in reading activities (Fesel et al., 2018; Mol et al., 2009; Nielen et al., 2018; Zhou & Yadav, 2017).

Indeed, traditional pen and paper writing activities can become monotonous for primary school students, resulting in short and uninspired pieces of writing. Differentiating the writing environment, as done in this study, can address these challenges. By using digital tools such as Fakebook and Pixton, students are provided with engaging platforms to reflect on and present their oral production and written research (Anson, 2021; Metcalf et al., 2016). Creating a profile of the person they were researching using Fakebook not only made the activity enjoyable but also provided a permanent record of their work. The process of creating a digital profile allowed students to delve deeper into the content they were writing about. Similarly, using Pixton to create a comic book offered students the opportunity to create original content while strengthening their understanding and reflection of various elements of the text. With each element of the story requiring determination or creation in the digital tool, students are actively engaged in the writing process. The use of digital tools in creating comics in the classroom has been found to enhance vocabulary development and provide an alternative teaching method (Castillo-Cuesta et al., 2022; Darsalina et al., 2016). Furthermore, it is well known that digital tools play a crucial role in developing writing skills (Warschauer, 2009; Graham & Perin, 2007). These tools can improve students' abilities to organize text, express their thoughts, and apply grammar effectively.

In this study, action plans consisting of activities supported by digital tools were implemented over an 8-week period in a public school classroom. The results show that these action plans had a positive impact. However, despite the emphasis on the positive impact of digital tools in education, Selwyn (2016) has a more critical perspective on the use of technological tools in education. Selwyn states that the use of technology in education does not always increase student achievement, and sometimes it can decrease the quality of education. Therefore, he emphasizes the need for careful planning and a strategic approach for the effective use of digital tools in education. Also, considering the limitations of this study, caution should be exercised in generalizing the results given the duration of the study and the number of participants. Hattie (2009) stated that many studies in education are usually conducted with limited sample groups, and therefore generalizing the results can sometimes be problematic. Long-term and large sample studies have shown that the impact of digital tools on language learning provides more accurate and consistent results. For example, in a large meta-analysis examining the contribution of technology to language learning, Grgurovic et al. (2013) showed that technology-enhanced language learning led to a significant increase in student achievement compared to traditional language learning. However, they found that this effect varied depending on the type of technological tools, duration, and frequency of use.

Recommendations

- Conducting action research in various school settings with similar or different action plans can provide a broader understanding of vocabulary development. This will allow for the exploration of vocabulary improvement from a more holistic perspective and provide insights into effective strategies in different educational contexts.

- Providing in-service training to teachers on action research design can equip them with the necessary knowledge and skills to conduct research in their classrooms. This will enable teachers to actively engage in problem-solving and continuous improvement within their own educational settings.

- Future studies can explore the relationship between vocabulary development and other components, such as reading comprehension or higher-order thinking skills. Investigating these aspects together can provide a comprehensive understanding of how vocabulary learning contributes to overall language proficiency and cognitive development.

Conflicts of Interest

No potential conflict of interest was reported by the author(s).

Ethical Approval

Ethical permission (02.06.2020, 2020/45) was obtained from the Necmettin Erbakan University Social Sciences and Human Research and Publication Ethics Committee institution for this research.

References

Acat, M. B. (2008). Effectiveness of concept maps in vocabulary instruction. *Eurasian Journal of Educational Research*, *33*, 1-16.

Akkoyunlu, B., & Yılmaz-Soylu, M. (2008). Development of a scale on learners' views on blended learning and its implementation process. *The Internet and Higher Education*, *11*(1), 26-32. https://doi.org/10.1016/j.iheduc.2007.12.006

Akman Dömbekci, H., & Erişen, M. A. (2022). Nitel araştırmalarda görüşme tekniği [Interview technique in qualitative research]. *Anadolu Üniversitesi Sosyal Bilimler Dergisi, 22*(Özel Sayı 2), 141-160. https://doi.org/10.18037/ausbd.1227330

Akram, M., Sarwat, S., & Mehmood, T. (2022). The use of pictures and realia to improve students vocabulary mastery: a classroom action research of fourth grade students. *Annals of Human and Social Sciences*, *3*(2), 399-406. https://doi.org/10.35484/ahss.2022(3-II)38

Akyol, H. & Temur, T. (2013). Kelime hazinesinin geliştirilmesi [Improving vocabulary]. In A. Kırkkılıç, & H. Akyol (Eds.), *İlköğretimde Türkçe öğretimi [Turkish Teaching in Primary Education]* (pp. 15-48). Pegem Akademi Yayınları.

Amalia, A. R. (2020). Improving students vocabulary mastery through guess my move game. *Acuity: Journal of English Language Pedagogy, Literature and Culture*, *5*(2), 109-122.

Anılan, H., Genç, B., & Göl, D. (2011). Destekleyici ek metin çalışmalarının kırsal kesim öğrencilerinin kelime kazanım düzeylerine etkisi [Effects of additional supportive text-based activities on rural school students' word acquisition levels]. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi, 29*(29), 43-57.

Anson, C. M. (2021). A heuristic approach to selecting technological tools for writing instruction and support. In M. Gustafsson & A. Eriksson (Eds.), *Negotiating the intersections of writing and writing instruction* (pp. 63-87). University Press of Colorado

Armut, M. (2019). Bir sözcük sıklığı çalışması ve Türkiye'deki mülteci öğrenciler [A word frequency study and refugee students in Turkey]. *Hacettepe University Journal of Education, 34*(3), 728-749. https://doi.org/10.16986/HUJE.2018043696

Aru, S. A., & Ertem, İ. S. (2014). Türkçe ders kitaplarında kelime hazinesini geliştirmeye yönelik planlamanın incelenmesi [Examination of planning for improving vocabulary in Turkish language textbook]. *Turkish Studies, 9*(3), 675-694. https://doi.org/10.7827/TurkishStudies.6189

Aslan, Ş. (2018). *Sosyal bilimlerde araştırma yöntemleri: Nicel, nitel ve karma tasarımlar için bir rehber [Social Science Research Methods: A Guide to Quantitative, Qualitative, and Mixed Design]*. Eğitim Yayınevi

Barab, S. A., Gresalfi, M., & Ingram-Goble, A. (2010). Transformational play: Using games to position person, content, and context. *Educational Researcher, 39*(7), 525-536. https://doi.org/10.3102/0013189X10386

Bargal, D. (2008). Action research: A paradigm for achieving social change. *Small Group Research, 39*(1), 17–27. https://doi.org/10.1177/1046496407313407

Başal, A. (2015). The implementation of a flipped classroom in foreign language teaching. *Turkish Online Journal of Distance Education, 16*(4), 28-37. https://doi.org/10.17718/tojde.72185

Biemiller, A. (2006). Vocabulary development and instruction: A prerequisite for school learning. *Handbook of Early Literacy Research*, *2*, 41-51.

Biemiller, A., & Boote, C. (2006). An effective method for building meaning vocabulary in primary grades. *Journal of Educational Psychology, 98*(1), 44-62. https://doi.org/10.1037/0022-0663.98.1.44

Blake, R. (2013). *Brave new digital classroom: technology and foreign language learning*. Georgetown University Press.

Brophy, J. E. (2013). *Motivating students to learn*. Routledge.

Bruner, J. (1996). *The culture of education*. Harvard University Press.

Bulut, B. (2013). *Etkin dinleme eğitiminin dinlediğini anlama, okuduğunu anlama ve kelime hazinesi üzerine etkisi [The effect of active listening training on listening comprehension, reading comprehension and vocabulary]*. [Master's dissertation, Adnan Menderes University].

Castek, J., Dalton, B., & Grisham, D. L. (2012). Using multimedia to support generative vocabulary learning. In E. H. Hiebert & M. Sailors (Eds.), *Finding the right texts: What works for beginning and struggling readers* (pp. 14-30). Guilford Press.

Castillo-Cuesta, L., & Quinonez-Beltran, A. (2022). Using digital comics for enhancing efl vocabulary learning during the COVID-19 Pandemic. *International Journal of Learning, Teaching and Educational Research, 21*(5), 478-491. https://doi.org/10.26803/ijlter.21.5.24

Çevik, A. (2011). *İlköğretim ikinci sınıf öğrencilerinin kelime servetini zenginleştirme üzerine deneysel bir çalışma [2nd year primary school students in an experimental study on the enrichment of the word wealth]*. [Master's thesis, Kırıkkale University].

Çevik, A. ve Tosunoğlu, M. (2020). İlköğretim 2. sınıf öğrencilerinin kelime servetini zenginleştirme üzerine deneysel bir çalışma [An experimental study to enrich primary school 2nd grade students' vocabulary]. *Journal of Mother Tongue Education, 8*(4), 1534-1551. https://doi.org/10.16916/aded.793018

Chiang, H. H. (2019). A comparison between teacher-led and online text-to-speech dictation for students' vocabulary performance. *English Language Teaching, 12*(3), 77-93. https://doi.org/10.5539/elt.v12n3p77

Chinnery, G. M. (2006). Emerging technologies: Going to the MALL: Mobile assisted language learning. *Language learning & technology, 10*(1), 9-16.

Chun, D. M., & Plass, J. L. (1996). Effects of multimedia annotations on vocabulary acquisition. *The Modern Language Journal, 80*(2), 183-198. https://doi.org/10.1111/j.1540-4781.1996.tb01159.x

Crain, S. (1991). Language acquisition in the absence of experience. *Behavioral and Brain Sciences, 14*(04), 597–612. https://doi.org/10.1017/s0140525x00071491

Crain, S. (1991). Language acquisition in the absence of experience. *Behavioral and Brain Sciences, 14*(04), 597–612. https://doi.org/10.1017/s0140525x00071491

Cunningham, A. E., & Stanovich, K. E. (1997). Early reading acquisition and its relation to reading experience and ability 10 years later. *Developmental Psychology, 33*(6), 934–945. https://doi.org/10.1037/0012-1649.33.6.934

Curry, L. A., Nembhard, I. M., & Bradley, E. H. (2009). Qualitative and mixed methods provide unique contributions to outcomes research. *Circulation, 119*(10), 1442-1452.

Darsalina, L., Syamaun, A., & Sari, D. F. (2016). The application of comic strips in teaching vocabulary. *Research in English and Education Journal, 1*(2), 137-145.

Demirci, S., & Baş, B. (2016). İlkokul 3. Sınıflarda söz varlığının geliştirilmesi üzerine bir eylem araştırması [A research on the improvement of a target vocabulary for the third grade primary school students]. *Milli Eğitim Dergisi, 45*(210), 215-235.

Derince, Z. M. & Özgen, B. (2021). Eylem araştırması [Action research]. In F. N. Seggie & Y. Bayyurt (Eds.), *Nitel araştırma yöntem, teknik, analiz ve yaklaşımları [Qualitative research methods, techniques, analyses, and approaches]* (3th ed., pp. 151-166). Anı Yayıncılık.

Dhini, B. F., & Ardiasih, L. S. (2021). Enhancing learners'listening skills with h5p: A moodle-based online learning platform. In 34th Annual Conference of the Asian Association of Open Universities - Vol II (pp. 169-185). The Open University of Sri Lanka.

Dickinson, D. K., Golinkoff, R. M., & Hirsh-Pasek, K. (2010). Speaking out for language: Why language is central to reading development. *Educational Researcher, 39*(4), 305-310. https://doi.org/10.3102/0013189X10370204

Duru, K. (2007). *İlköğretim 5. sınıf öğrencilerinin yazılı anlatımlarındaki aktif kelime servetinin belirlenmesi (Uşak / Sivaslı örneği) [Identification of active vocabulary on writing expressing of secondary school's 5th class (Example of Uşak / Sivaslı)]*. [Master's thesis, Afyon Kocatepe University].

Faradisa, S. N. (2021). The use of plotagon to enhance vocabulary acquisition for secondary school students [Doctoral dissertation, Ar-Raniry University].

Fesel, S. S., Segers, E., & Verhoeven, L. (2018). Individual variation in children's reading comprehension across digital text types. *Journal of Research in Reading, 41*(1), 106-121. https://doi.org/10.1111/1467-9817.12098

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. Basic Books.

Gee, J. P. (2003). What video games have to teach us about learning and literacy. C*omputers in Entertainment (CIE), 1*(1), 20-20.

Göçer, A. (2009). Türkçe eğitiminde öğrencilerin söz varlığını geliştirme etkinlikleri ve sözlük kullanımı [Activities of developing vocabulary of students and dictionary usage in Turkish education]. *Turkish Studies, 4*(4), 1025-1055.

Godwin-Jones, R. (2010). Emerging technologies: Mobile apps for language learning. *Language Learning & Technology, 14*(2), 2-11.

Golonka, E. M., Bowles, A. R., Frank, V. M., Richardson, D. L., & Freynik, S. (2014). Technologies for foreign language learning: A review of technology types and their effectiveness. *Computer Assisted Language Learning, 27*(1), 70-105. https://doi.org/10.1080/09588221.2012.700315

Graham, S., & Perin, D. (2007). *Writing next: Effective strategies to improve writing of adolescents in middle and high schools – A report to Carnegie Corporation of New York*. Alliance for Excellent Education.

Gürgür, H. (2017). Eylem araştırması [Action research]. In A. Saban & A. Ersoy (Eds.), *Eğitimde nitel araştırma desenleri [Qualitative research designs in education]* (2nd ed., pp. 31-80). Anı Yayıncılık.

Harmon, J. M., Hedrick, W. B., & Fox, E. A. (2000). A content analysis of vocabulary instruction in social studies textbooks for grades 4-8. *The Elementary School Journal*, *100*(3), 253-271.

Herr, K., & Anderson, G. L. (2005). *The action research dissertation: A guide for students and faculty*. SAGE Publications.

Hidayat, M. T., & Yulianti, A. K. (2020). The effectiveness of flashcard augmented reality media and game chick learn on the ability to memorize vocabulary in English primary school students. *Int. J. Innov. Creativ. Change*, *11*, 151-168.

Hildreth, G. (1953). Inter-grade comparisons of word frequencies in children's writing. *Journal of Educational Psychology, 44*, 429-434.

Hmelo-Silver, C. E., Duncan, R. G., & Chinn, C. A. (2007). Scaffolding and achievement in problem-based and inquiry learning: A response to Kirschner, Sweller, and Clark (2006). *Educational psychologist, 42*(2), 99-107. https://doi.org/10.1080/00461520701263368

Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development, 74*(5), 1368-1378. https://doi.org/10.1111/1467-8624.00612

Hsu, H. K., Wang, S. K., & Comac, L. (2008). Using audioblogs to assist English-language learning: An investigation into student perception. *Computer Assisted Language Learning, 21*(2), 181-198. https://doi.org/10.1080/09588220801943775

Hsu, T. C. (2019). Effects of gender and different augmented reality learning systems on English vocabulary learning of elementary school students. *Universal Access in the Information Society, 18*, 315-325.

Hwang, W. Y., Shadiev, R., Hsu, J. L., Huang, Y. M., Hsu, G. L., & Lin, Y. C. (2016). Effects of storytelling to facilitate EFL speaking using web-based multimedia system. *Computer Assisted Language Learning, 29*(2), 215-232. https://doi.org/10.1080/09588221.2014.927367

İpek Eğilmez, N. (2010). *İlköğretim Türkçe ders kitaplarındaki söz varlığının ilköğretim dördüncü sınıf öğrencilerinin yazılı anlatımlarına aktarımı [The transference of the vocabulary in Turkish course books in primary education into the primary education fourth grade students? Written speech]*. [Doctoral dissertation, Uludağ University].

Janssens, K. A., Bos, E. H., Rosmalen, J. G., Wichers, M. C., & Riese, H. (2018). A qualitative approach to guide choices for designing a diary study. *BMC Medical Research Methodology, 18*(1), 1-12.

Jarrahi, M.H., Goay, C., Zirker, S., & Zhang, Y. (2021). Using digital diaries as a research method for capturing practices in situ. In G. Symon., K. Prichard., & C. Hine (Eds.), *Research methods for digital work and organization: Investigating distributed, multi-modal, and mobile work* (pp. 1-24). Oxford University Press.

Jiang, M. Y. C., Jong, M. S. Y., Wu, N., Shen, B., Chai, C. S., Lau, W. W. F., & Huang, B. (2022). Integrating automatic speech recognition technology into vocabulary learning in a flipped English class for Chinese college students. *Frontiers in Psychology, 13*, 1-16. Doi: https://doi.org/10.3389/fpsyg.2022.902429

Kan, M. O., & Karadavut, Z. (2021). Derlem temelli bir karşılaştırma: 4. sınıf Türkçe ders kitaplarının söz varlığı açısından incelenmesi [A corpus-based comparison: examination of 4th grade turkish textbooks in terms of vocabulary]. *İnönü Üniversitesi Eğitim Fakültesi Dergisi, 22*(2), 1597-1610. https://doi.org/10.17679/inuefd.952657

Karadağ, Ö. & Kurudayıoğlu, M. (2010). Türkçedeki kelime türetme özelliğinin ilköğretim öğrencilerinin yazılı anlatımlarına yansıması [The reflection of the principles of turkish word formation on the writings of primary school students]. *TÜBAR*, *(27),* 437-455.

Karadağ, Ö., Karadağ, Ö., & Kurudayıoğlu, M. (2010). 2005 Türkçe programına göre hazırlanmış ilköğretim birinci kademe Türkçe ders kitaplarının kelime hazinesi [The vocabulary stock of the first stage of elementary school Turkish course books prepared within the framework of 2005 Turkish curriculum]. *TÜBAR, (27),* 423-436.

Karatay, M., & Taş, M. (2021). Eylem araştırması'nın eğitim alanında kullanımı ve önemi [The use and importance of action research in education]. *OPUS International Journal of Society Researches, 11*(38), 17-25. https://doi.org/10.26466/opus.736788

Kayıran, B. K., & Ağaçkıran, Z. K. (2018). İlkokul birinci sınıf öğrencilerinin okuduğunu anlama başarılarının ve okuma hızlarının çeşitli değişkenler açısından incelenmesi [An investigation of the primary school first grade students' reading comprehension success and reading speed in terms of various variables]. *Gaziantep Üniversitesi Eğitim Bilimleri Dergisi*, *2*(2), 30-44.

Keith, R. E., Crosson, J. C., O'Malley, A. S., Cromp, D., & Taylor, E. F. (2017). Using the consolidated framework for implementation research (CFIR) to produce actionable findings: A rapid-cycle evaluation approach to improving implementation. *Implementation Science, 12*(1), 1-12.

Keklik, S. (2011). Türkçede on bir yaşına kadar çocuklara öğretilmesi gereken, birleşim gücü yüksek ilk bin kelime [The first thousand words in Turkish which can easily be combined should be taught until eleven year old children]. *ODÜ Sosyal Bilimler Enstitüsü Sosyal Bilimler Araştırmaları Dergisi, 4*, 80-95.

Kervin, L., & Derewianka, B. (2011). New technologies to support language learning. In B. Tomlinson (Ed.), *Materials development in language teaching* (2nd ed., pp. 328-351). Cambridge University Press.

Kırkgöz, Y. (2011). A blended learning study on implementing video recorded speaking tasks in task-based classroom instruction. *TOJET: The Turkish Online Journal of Educational Technology, 10*(4), 1-13.

Korat, O. (2010). Reading electronic books as a support for vocabulary, story comprehension and word reading in kindergarten and first grade. *Computers & Education, 55*(1), 24-31. https://doi.org/10.1016/j.compedu.2009.11.014

Kucirkova, N. (2014). iPads in early education: Separating assumptions and evidence. *Frontiers in Psychology, 5*, 1-3.

Kukulska-Hulme, A., & Shield, L. (2008). An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL*, *20*(3), 271-289.

Kultas, E., & Ulusoy, M. (2022). *Kelime oyunlarının ilkokul 4. sınıf öğrencilerinin kelime hazineleri üzerindeki etkisi [The effect of word games on the vocabulary of primary school 4th grade students]. Electronic Journal of Social Sciences, 21*(81), 430-441. https://doi.org/10.17755/esosder.1000691

Larson, L. C., Dixon, T., & Townsend, D. (2012). How can teachers increase classroom use of academic vocabulary? *Voices from the Middle, 19*(4), 16-21.

Ma, Q. & Mei, F. (2021). Review of corpus tools for vocabulary teaching and learning. *Journal of China Computer-Assisted Language Learning*, *1*(1), 177-190. https://doi.org/10.1515/jccall-2021-2008

Maden, A. (2020). İlkokul Türkçe ders kitaplarının söz varlığını zenginleştirme açısından incelenmesi [Investigation of primary school Turkish textbooks in terms of vocabulary enrichment]. *Electronic Journal of Social Sciences*, *19*(76), 1631-1650. https://doi.org/10.17755/esosder.711074

Marulis, L. M., & Neuman, S. B. (2010). The effects of vocabulary intervention on young children's word learning: A meta-analysis. *Review of Educational Research, 80*(3), 300-335.

Maududi, A., Purwanto, E., & Awalya, A. (2018). Influence of pictorial crossword puzzle media toward vocabulary mastery and initial writing skills of elementary school students. *Journal of Primary Education*, *7*(3), 318-323. https://doi.org/10.15294/jpe.v7i3.24214

Mayer, R. E. (2005). Cognitive theory of multimedia learning. In R. E. Mayer (Ed.), *The Cambridge handbook of multimedia learning* (pp. 31-48). Cambridge University Press.

Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). Cambridge University Press.

Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist*, *38*(1), 43-52.

McNiff, J., & Whitehead, J. (2010). *You and your action research project*. Routledge.

Merchant, G. (2012). Unravelling the social network:Theory and research. *Learning, Media and Technology*, *37*(1), 4-19.

Mertler, C. A. (2014). *The data-driven classroom: How do I use student data to improve my instruction? (ASCD Arias)*. ASCD.

Metcalf, A., Layton, M. V., & Goslin, T. L. (2016). Three ways to improve student presentations. *TESOL Journal, 7*(2), 421-428. https://doi.org/10.1002/tesj.241

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. SAGE Publications.

Mills, G. E. (2011). *Action research: A guide for the teacher researcher*. Pearson.

Mol, S. E., Bus, A. G., & De Jong, M. T. (2009). Interactive book reading in early education: A tool to stimulate print knowledge as well as oral language. *Review of Educational Research, 79*(2), 979-1007.

Nazara, P. (2019). Learning vocabularies using short stories at primary school: students' perception. *Journal of English Teaching*, *5*(3), 157-165.

Neale, J., Allen, D., & Coombes, L. (2005). Qualitative research methods within the addictions. *Addiction, 100*(11), 1584–1593. https://doi.org/10.1111/j.1360-0443.2005.01230.x

Neuman, S. B., Newman, E. H., & Dwyer, J. (2011). Educational effects of a vocabulary intervention on preschoolers' word knowledge and conceptual development: A cluster-randomized trial. *Reading Research Quarterly, 46*(3), 249-272.

Nielen, T. M., Smith, G. G., Sikkema-de Jong, M. T., Drobisz, J., van Horne, B., & Bus, A. G. (2018). Digital guidance for susceptible readers: Effects on fifth graders' reading motivation and incidental vocabulary learning. *Journal of Educational Computing Research, 56*(1), 48-73. https://doi.org/10.1177/0735633117708283

Noble, H., & Smith, J. (2014). Qualitative data analysis: A practical example. *Evidence-Based Nursing, 17*(1), 2-3.

Norton, L. (2018). *Action research in teaching and learning: A practical guide to conducting pedagogical research in universities*. Routledge.

Ocak, G. & Akkaş Baysal, E. (2020). Eylem araştırması süreci [The process of action research]. In G. Ocak (Ed.), *Eğitimde eylem araştırması ve örnek araştırmalar [Action research and case studies in education]* (4ᵗʰ ed., pp. 51-99). Pegem Akademi Yayıncılık.

Ouellette, G. (2006). What's meaning got to do with it: The role of vocabulary in word reading and reading comprehension. *Journal of Educational Psychology, 98*(3), 554–566.

Özcan, Y. (2020). *İlkokul birinci sınıf öğrencilerinin kelime hazineleri üzerine bir araştırma [An investigation on primary education first class level of children's vocabulary]*. [Doctoral dissertation, Yıldız Teknik University].

Paivio, A. (1991). Dual coding theory: Retrospect and current status. *Canadian Journal of Psychology/Revue Canadienne de Psychologie, 45*(3), 255-287.

Piaget, J. (1973). *The child and reality: Problems of genetic psychology.(Trans. Arnold Rosin)*. Grossman.

Polat, A. (2022). Nitel araştırmalarda yarı-yapılandırılmış görüşme soruları: Soru form ve türleri, nitelikler ve sıralama [Semi-structured interview questions in qualitative research: Question forms and types, qualities and order]. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, *22*(Özel Sayı 2), 161-182. https://doi.org/10.18037/ausbd.1227335

Prades-Yerves, L. (2022). teaching phrasal verbs: A project implementing h5p. In ICERI2022 Proceedings (pp. 819-825). IATED.

Prensky, M. (2001). Digital natives, digital immigrants part 2: Do they really think differently? *On the Horizon, (9)*6, 1-6. https://doi.org/10.1108/10748120110424843

Proctor, C. P., Dalton, B., & Grisham, D. L. (2007). Scaffolding English language learners and struggling readers in a universal literacy environment with embedded strategy instruction and vocabulary support. *Journal of Literacy Research, 39*(1), 71-93. https://doi.org/10.1080/10862960709336

Rabu, S. N. A., & Talib, Z. (2017). The effects of digital game-based learning on primary school students' English vocabulary achievement and acceptance. *Innovative Teaching and Learning Journal (ITLJ), 1*(1), 61-74.

Resnick, M. (2004). Edutainment? No thanks. I prefer playful learning. *Associazione Civita Report on Edutainment*, *14*, 1-4.

Robin, B. R. (2008). Digital storytelling: A powerful technology tool for the 21st century classroom. *Theory Into Practice, 47*(3), 220-228. https://doi.org/10.1080/00405840802153916

Rubin, K. H., Bukowski, W., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (Vol. 3, 6th ed., pp. 571–645). John Wiley & Sons Inc.

Ryder, R. J., & Slater, W. H. (1988). The relationship between word frequency and word knowledge. *The Journal of Educational Research*, *81*(5), 312-317.

Saine, P. (2012). iPods, iPads, and the SMARTBoard: Transforming literacy instruction and student learning. *New England Reading Association Journal, 47*(2), 74-79.

Saka, F., İşman, A., & Koçak-Usluel, Y. (2014). The effects of computer-based instruction on the achievement, attitudes and retention of fourth grade mathematics students in North Cyprus. *Computers & Education, 78*, 1-11.

Say, B., Zeyrek, D., Oflazer, K., & Özge, U. (2002, August). Development of a corpus and a treebank for present-day written Turkish. In *Proceedings of the eleventh international conference of Turkish linguistics* (pp. 183-192). Eastern Mediterranean University.

Sealey, A., & Thompson, P. (2004). 'What do you call the dull words?'Primary school children using corpus-based approaches to learn about language. *English in Education*, *38*(1), 80-91.

Segers, E., & Verhoeven, L. (2009). Learning in a sheltered Internet environment: The use of WebQuests. *Learning and Instruction, 19*(5), 423-432. https://doi.org/10.1016/j.learninstruc.2009.02.017

Sever, E., & Çetinkaya Özdemir, E. (2018). İlkokul dördüncü sınıf öğrencilerinin yazılı anlatım çalışmalarında kullandıkları sözcüklerin türleri üzerine bir değerlendirme [An evaluation of the word classes primary school fourth-grade students use in their writing practices]. *Elementary Education Online, 17*(1), 440-449. https://doi.org/10.17051/ilkonline.2018.413797

Snow, C. E., Burns, S., & Griffin, P. (1998). *Preventing reading difficulties in young children: Report of the Committee on the Prevention of Reading Difficulties in Young Children.* National Academy Press.

Snow, C. E., Porche, M. V., Tabors, P. O., & Harris, S. R. (2007). *Is literacy enough? Pathways to academic success for adolescents*. Paul H Brookes Publishing.

Stahl, S. A., & Nagy, W. E. (2006). *Teaching word meanings*. Lawrence Erlbaum Associates Publishers.

Sternberg, R. J. (2003). *Wisdom, intelligence, and creativity synthesized*. Cambridge University Press.

Stringer, E. T. (2013). *Action research*. SAGE Publications.

Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics*. Pearson.

Tanrıverdi, T. (2019). *İlkokul ikinci sınıfta işbirlikli öğrenme yönteminin öğrencilerin kelime hazinesi gelişimine ve Türkçe dersine yönelik tutumlarına etkisinin incelenmesi [Investigation of the effect of cooperative learning method on the development of vocabulary and towards Turkish lecture in elementary school second year].* [Doctoral dissertation, Sakarya University].

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality In Health Care, 19*(6), 349-357.

Tragant, E., Marsol, A., Serrano, R., & Llanes, À. (2016). Vocabulary learning at primary school: A comparison of EFL and CLIL. *International Journal of Bilingual Education and Bilingualism*, *19*(5), 579-591.

Tuğyan, Ö. (2010). *Bazı öğretim materyalleri kullanımının ilköğretim 2. sınıf öğrencilerinin kelime servetine etkisi [Istanbul Ümraniye TEV primary school 2th class to determine the relationship between word wealth and usage of some education materials]*. [Master's thesis, Afyon Kocatepe University].

Turgut Singil, A. (2008). *İlköğretim 3. sınıf öğrencilerinin yazılı anlatımlarındaki aktif kelime servetinin belirlenmesi (Uşak/Merkezi Örneği) [Identification of active vocabulary on written expession of primary school: 3. grade (Example of Uşak)]*. [Master's thesis, Afyon Kocatepe University].

Vandergrift, L., & Goh, C. C. M. (2012). *Teaching and learning second language listening: Metacognition in action*. Routledge.

Varan, S. (2017). *İlkokul 4. sınıf öğrencilerinin zihinsel sözlüğünü geliştirmede eğitsel oyunların etkisi [The influence of educational games on improving the mental lexicon of primary school 4th grade students]*. [Master's thesis, Bartın University].

Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.

Warschauer, M. (1996). Computer-assisted language learning: an introduction. In Fotos, S. (Ed.), *Multimedia language teaching* (pp. 3-20). Logos International.

Warschauer, M. (2009). Digital literacy studies: Progress and prospects. In M. Baynham & M. Prinsloo (Eds.), *The future of literacy studies* (pp. 123-140). Palgrave Macmillan.

Wigfield, A., & Eccles, J. S. (2000). Expectancy–value theory of achievement motivation. *Contemporary educational psychology*, *25*(1), 68-81.

Wiggins, G. P., & McTighe, J. (2005). *Understanding by design*. ASCD.

Yang, Y. T., & Wu, W. C. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. *Computers & Education, 59*(2), 339-352. https://doi.org/10.1016/j.compedu.2011.12.012

Yıldırım, A., & Şimşek, H. (2021). *Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative research methods in social sciences]* (12. Ed.). Seçkin Yayıncılık.

Yıldırım, K. (2010). *İşbirlikli öğrenme yönteminin okumaya ilişkin bazı değişkenler üzerindeki etkisi ve yönteme ilişkin öğrenci-veli görüşmeleri [The effects of cooperative learning on certain variables related to reading, parents', and students' opinions toward cooperative learning]*. [Doctoral dissertation, Gazi University].

Yıldız, C., Okur, A., Arı, G. & Yılmaz, Y. (2010). *Kuramdan uygulamaya Türkçe öğretimi [Theory to practice Turkish language teaching]*. Pegem Akademi Yayıncılık.

Zhou, N., & Yadav, A. (2017). Effects of multimedia story reading and questioning on preschoolers' vocabulary learning, story comprehension and reading engagement. *Educational Technology Research and Development, 65*, 1523-1545.

Zou, D., Huang, Y., & Xie, H. (2021). Digital game-based vocabulary learning: where are we and where are we going?. *Computer Assisted Language Learning*, *34*(5-6), 751-777.