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The Review Of The Effects Of Realistic Mathematics Education On Students' Academic Achievement In Turkey: A Meta-Analysis Study

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Abstract

Realistic Mathematics Education (RME) includes identifying and solving problems. Besides, it is an effort to organize a case, reorganize it according to new ideas, and concretize and rediscover the case to understand it better. This research aims to determine the effect of RME-based teaching against traditional methods, develop a general opinion, and contribute to the literature. In the study, the meta-analysis method was used to synthesize the results of independent experimental studies examining RME's effect on academic achievement. The data set of the research was created in September 2022. Necessary searches were carried out within the ULAKBİM TR Index, YÖK Thesis, ERIC and Web of Science databases. As a result of these searches, 54 studies met the selection criteria to be included in the meta-analysis. The random-effects model was used in the research. As a result of the analysis, the calculated effect sizes were all positive. In the light of this finding, it has been concluded that in all studies, RME-based teaching was more effective than traditional methods on students' academic achievement in mathematics. A moderator analysis was also carried out to determine whether the effect sizes differed statistically significantly according to the variables "publication type, sample size, and educational stage." As a result of the moderator analysis, it was concluded that all moderator variables obtained from the GME-based teaching practices significantly affected the combined effect size.

Keywords: Realistic mathematics education, Meta-analysis, Publication type, Sample size, Level of education

Introduction

The understanding that knowledge has a precise and unchangeable structure and that being knowledgeable means storing and memorizing existing information in the mind has lost its importance today (Özkürkçüler, 2019). Individuals learn by discovering their own knowledge and questioning existing knowledge. Especially in the changing world, there are changes in individuals' education and understanding. According to the Ministry of National Education (MONE) (2018), this change describes individuals who produce knowledge, use it functionally in life, solve problems, and think critically. Suitable education and training programs should be created to raise the desired individuals.

Changes are made in mathematics teaching and curricula according to the changing and developing circumstances of our age. In the 2018 Mathematics Curriculum, the objective of "making sense of the relationships between people and objects and the objects among themselves by using the meaning and language of mathematics" was emphasized (MONE, 2018). According to Çilingir and Artut (2016), some researchers (De Lange, 1987; Gravemeijer, 1994; Treffers, 1987; Streefland, 1990; Van den Heuvel-Panhuizen, 2003) proposed a teaching theory for mathematics education that covered the changed terms and qualities. This theory, which includes identifying and solving a problem, is called Realistic Mathematics Education (RME). Besides, it is an effort to organize a case, reorganize it according to new ideas, and concretize and rediscover the case to understand it better (Freudenthal, 1968; Işık, 2019).

Mathematizing, which is the basic principle of RME, is a level up in mathematics, according to Freudenthal (Ödemiş, 2019). The word “mathematizing” refers to the desire to achieve a level with the help of mathematics taught in students' mathematics lessons (Ödemiş, 2019). In Gravemeijer (1999), contextual problems related to the subject to be covered are given to students at the beginning of the course, and students are focused on the whole subject. Students present their solutions to the problem based on their knowledge of the subject and associate these mathematical concepts with real-life problem cases (Van den Heuvel-Panheuizen 2003; Okuyucu, 2019).

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Treffers (1978, 1987) stated that mathematizing could occur in two ways: horizontally and vertically (Özkürkçüler, 2019). In horizontal mathematizing, students come with mathematical tools that help them understand and solve real-life problems. It includes exploring or defining authentic mathematics, schematizing, formulating, and envisioning a problem from different angles. Besides, converting a real-life problem into a mathematical problem is at the core of horizontal mathematizing. Vertical mathematizing, on the other hand, is a method of rearrangement in the mathematical system. Showing and proving a relationship in a formula, simplifying and organizing models, and using different models, completing and combining models, formulating and generalizing a mathematical model are examples of vertical mathematizing (Zulkardi, 2002; Kan, 2019).

Students use horizontal mathematizing when solving a problem, they have experience with and vertical mathematizing if they encounter an advanced problem. Students gain formal and informal mathematical models with horizontal mathematizing, and they reach vertical mathematizing through problem-solving and similar applications. The students who find the mathematical result interpret the solution they have reached and create a better method for another problem. In this way, students use mathematical knowledge (Demirdöğen, 2007; Gözkaya, 2015). Freudenthal's most convincing argument is that all students will not become mathematicians in the future, but mathematics will be a tool for the vast majority to solve daily life problems (Çakır, 2013). According to Freudenthal (1991), there is no definite line that can distinguish horizontal and vertical mathematizing concepts, that they can participate in all stages of mathematical activities, and that the student must make this decision for himself or herself (Yorulmaz, 2018; Özkürkçüler, 2019).

Regarding the mathematics curriculum in Turkey (2018), using real-life events in the mathematics teaching process is one of the main objectives of mathematics courses. Besides, the program emphasizes that students have to build their own knowledge using their experiences (Tabak, 2019). PISA is an international test based on real-life events. Mathematical literacy is one of the literacy areas covered in the PISA application. Turkey's low achievement in an exam based on real-life situations such as PISA points out how important it is to implement RME-based teaching to build and develop mathematical literacy.

Regarding the results of TIMSS 2015, another international exam, in a general framework, the knowledge, application, and reasoning scores of primary school 4th graders and secondary school 8th graders are below the TIMMS average (Tabak, 2019; Karip, 2017). When the literature is examined, it is observed that the first academic studies on a realistic mathematics education approach in Turkey have started to be carried out since the beginning of the 2000s. On the other hand, it is seen that there has been a great increase in the number of these studies in the last five years. In studies on realistic mathematics education, generally examine students' knowledge creation processes (Deniz, 2014; Dündar, 2019; Uça, 2014), collect student opinions (Okuyucu & Bilgin, 2019 and examine the effect of a realistic mathematics education approach on various variables (Çilingir, 2015; Doluzengin, 2019; Lestari and Surya, 2017; Trisnawati, Pratiwi and Waziana, 2018). However, Tabuk (2019), in his study examining the trends of research on a realistic mathematics education approach in our country, determined that a significant part of these studies focused on the effect of students' academic success and attitudes towards mathematics. Considering the studies conducted on the realistic mathematics education approach, it is noteworthy that the effect of this approach on academic achievement is generally significantly more effective than classical teaching methods. However, another issue that is as important as whether the realistic mathematics education approach is more effective than traditional approaches in mathematics teaching is how effective this approach is. At this point, the effect size value obtained by the meta-analysis method allows an easier evaluation. With the effect size value, an evaluation can be made as "low, medium, or large effective" (Gündüz & Kutluca, 2019).

Considering these facts in Turkey involving RME, this research aims to determine the effect of RME-based teaching against the traditional methods, develop a general opinion, and contribute to the literature. The approaches that provide research opportunities in a wider area are needed to effectively use the studies' results and reliably interpret the analyses. In Turkey, there are many experimental studies examining the impact of RME-based teaching on different groups of students, which reveals the need to conduct a meta-analysis on these studies. Besides, higher-level studies are necessary for being inclusive and reliable in interpreting the cumulative facts created by similar studies (Akgöz, Ercan, & Kan, 2004). Considering all these facts, it was decided to conduct a meta-analysis to be able to make a precise judgment about the effect of RME-based teaching on academic achievement in mathematics compared to traditional teaching methods and make much clearer predictions and generalizations for the future.

Glass (1976) was the first to name meta-analysis as "the analysis of analysis"; this definition is still used today. Meta-analysis is a type of analysis based on the studies' effectiveness, considering their similarities and different aspects (Eser, Yurtçu, & Aksu, 2020). Meta-analysis studies, which also mean combining and re-analyzing the

results obtained from different studies, are based on the idea of "analysis of analysis," which is a method that can be used for this purpose (Kaplan et al., 2015).

This research's purpose was to determine the effect of RME-based teaching on students' academic achievement compared to traditional teaching. There are very few studies on RME, which has been mentioned frequently in modern mathematics education, in the related literature. The sample of the meta-analysis performed by Kaplan et al. (2015) was 12 national theses. No moderator analysis has been performed in the mentioned study. In his meta-analysis involving RMA, Tabak (2019) has covered 38 studies conducted in Turkey and used the content analysis method. Tamur, Juandi, and Adem (2020) have conducted a meta-analysis on a sample of 72 studies to examine the effect of RME-based teaching on students' achievement in Indonesia.

According to the purpose of the research, the problem statement of the research was set as follows: "When RME-based teaching is compared to traditional teaching, do the effect sizes of the studies involving the effect of the teaching methods on student academic achievement differ statistically in favor of RME-based teaching?"
The sub-problems of the research are as follows:

1. Does RME-based teaching have a different effect on students' academic achievement compared to traditional teaching?
2. Regarding the studies comparing RME-based teaching with traditional teaching, is there a statistically significant difference between the effect sizes according to publication type?
3. Is there a statistically significant difference between the studies' effect sizes according to the study's sample size ($n < 30, n \geq 30$)?
4. Is there a statistically significant difference between the studies' effect sizes according to the educational stage (primary school, middle school, high school) at which RME-based teaching is applied?

Method

This part includes the topics related to the research model, the data collection process, the inclusion criteria, the data coding, and the data analysis.

Research Model

In the study, the meta-analysis method was used to synthesize the results of independent experimental studies examining RME's effect on academic achievement. Meta-analysis is considered the analysis of the analyses performed by reviewing the studies that are independent of each other in order to obtain information on a relevant subject, combining the results obtained after this review process, and interpreting the findings related to the results (Cohen, 1988; Lipsey & Wilson, 2001).

Data Collection

The data set for the research was created in September 2022. Necessary searches were carried out within the ULAKBİM TR Index, YÖK Thesis, ERIC and Web of Science databases using the keywords "mathematics, realistic mathematics, Realistic Mathematics Education," "matematik," "gerçekçi matematik," gerçekçi matematik eğitimi" to find the studies that constitute the research sample. As a result of these searches, 54 study theses (38 master's, 6 doctoral, and 10 articles) involving the effects of RME on Turkish students' academic achievement in mathematics have been reached. Papers compiled from theses were not included in the research.
The presentations and reports of systematic review and meta-analysis studies should be accurate. Accordingly, in the international literature, it is recommended to use the flow chart suggested by the PRISMA statement in systematic reviews and meta-analysis studies (The PRISMA Group, 2009). The flowchart showing the data collection process through literature search is given in Figure 1.

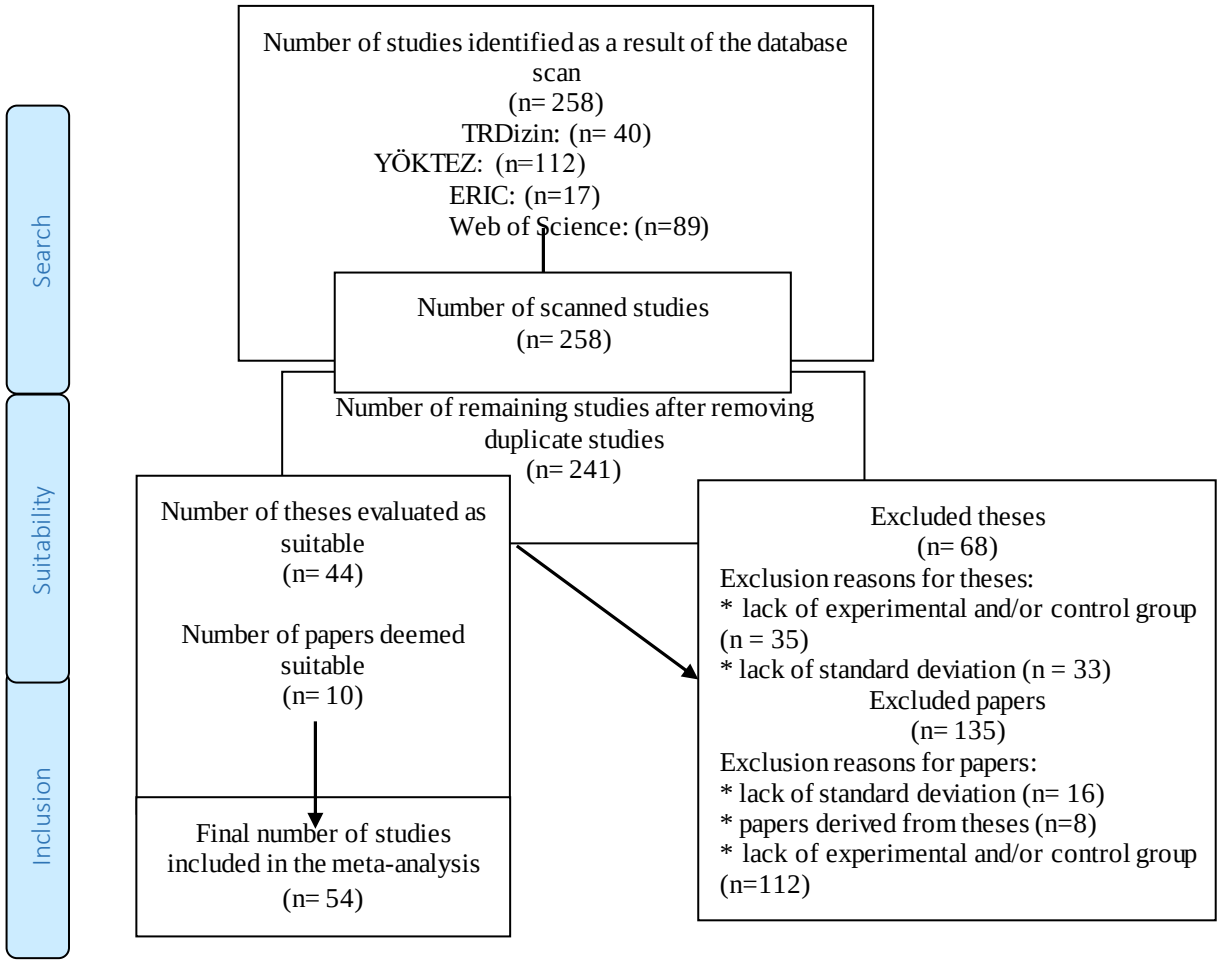

Figure 1. Data collection flowchart

Inclusion Criteria

The following criteria were considered while determining the studies to be included in the research:

1. Studies should have been published between 2000-2022.
2. Studies should be either a master's thesis, a doctoral thesis, or articles published in peer-reviewed scientific journals.
3. Studies should have been performed using an experimental design.
4. Studies should have been carried out with pre-school, elementary, middle, high school, and university students studying in Turkey.
5. In the studies, RME-based teaching should have been applied to the experimental group and traditional teaching approaches to the control group.
6. The mean, standard deviation, and number of participants in both groups of the study should be given for both the experimental and control groups.

Data Coding

Before this meta-analysis-based study is carried out, a coding form was created to address the studies involving RME from a general perspective and identify the studies to include in the meta-analysis. The following information is entered in the coding form:

1. Name of the study; author(s) of the study
2. Publication type (1 = master's thesis, 2 = doctoral thesis, 3 = article)

3. Sample size, arithmetic mean, and standard deviation of the experimental and control groups included in the study
4. The experimental group's sample size is less than 30, equal to, or greater than 30 (0 = n <30, 1 = ≥30)
5. The educational level of the student population on which the study was conducted (0 = primary school, 1 = middle school, 2 = high school)

To ensure the content validity of the coding form, four experts with a doctorate in educational sciences were given detailed information about the research process steps, and expert opinions were obtained for this purpose. The studies to be included in the meta-analysis process should be coded by at least two coders to ensure coding reliability (Cooper, 2016). Thus, the coding of the research was carried out by three experts (with a doctorate in mathematics education) to ensure the research's reliability. These three experts then came together, and the necessary consensus was achieved on the codings that did not overlap with each other. In this way, errors caused by the data entry process were minimized. The reliability of the coding was calculated using the formula "Reliability = Consensus/(Consensus + Disagreement) x 100" (Miles & Huberman, 1994) and was found to be 85%. In terms of coding reliability, values obtained by this formula of 70% or higher are considered sufficient (Yıldırım & Şimşek, 2011). In light of this information, the coding is reliable in terms of the coding reliability (85%) obtained for the research. It was concluded that the measurement results made on the coding form were valid and reliable when considered holistically.

Data Analysis

Fixed and random effect models are used in meta-analysis to calculate the effect sizes. It is necessary to be very careful in deciding the model to be used in the meta-analysis. In the research, the independent experimental studies examining the effect of RME on academic achievement, which had been reached by a literature scan, have formed the research sample. In determining the research's sampling frame, a universe was specified, and the actual effect size of each study in this universe has been assumed to be different. Specifying a universe, assuming that each study's actual effect size in the universe is different, and the generalizability of the analysis results to the universe and all cases included in the sampling frame are the indicators for choosing the random-effects model. All these issues were considered, and the random-effects model was used in the research (Borenstein et al., 2009; Borenstein, 2019).

Jamovi and R programs were used in the analysis of the research. Jamovi is free software built on the R programming language that performs statistical analysis using popular R packages (Eser, Yurtçu & Aksu, 2020). Both programs made use of the metaphor package (Viechtbauer, 2010). The effect sizes of the studies included in the meta-analysis should met the normal distribution assumption (Rosenberg, Adams, & Gurevitch, 2000). First of all, it was checked whether the studies' effect sizes included in the meta-analysis meet the normal distribution assumption. The normal distribution chart obtained from the studies' effect sizes was analyzed, and it was concluded that the normal distribution assumption was met.

Regarding the variance estimation, the Hartung-Knapp-Sidik-Jonkman (HKSJ) method, which is known to perform significantly better than the DerSimonian-Laird method, which is frequently used in the literature, was preferred (Viechtbauer, 2005; Sidik and Jonkman, 2007; IntHout, Ioannidis, and Borm, 2014). Considering that different achievement tests were used in the studies included in the meta-analysis, the *standardized mean difference* was used as the model's effect size measurement. Regarding heterogeneity, Tau^2, Q, I^2, and confidence interval values were used to obtain prediction information even though they do not give information about the amount of heterogeneity (Borenstein, 2019). Fail-Safe N was used to assess the study's strength and reliability, and the outputs obtained from p-curve and p-uniform analysis were taken into account for publication bias.

Considering the different subgroups of the studies that constitute the meta-analysis sample, moderator analyses were conducted to compare the calculated effect size values The publication type, the experimental group's sample size being less than or equal to 30, and the educational stage were used as moderators. The confidence level was taken as 95% in all calculations related to effect size. The Hedge's g was taken as the difference between the means in units of the pooled standard deviation. While interpreting the importance of the calculated effect sizes, the following criteria were used (Cohen, Manion, & Morrison, 2011):

$0 \leq$ Effect size ≤ 0.20 (Weak Effect),
$0.21 \leq$ Effect size ≤ 0.50 (Low Effect),
$0.51 \leq$ Effect size ≤ 1.00 (Moderate Effect)
1.00> Effect size (Strong Effect)

Results

In this part of the research, the average effect sizes of the studies included in the meta-analysis were calculated, and the first sub-problem, "How does RME-based teaching affect students' academic achievement compared to traditional teaching?" was addressed.

Findings Regarding the Effect of RME-Based Instruction on Academic Achievement

Regarding the recent studies on publication bias, it was mostly due to significance levels and p-hacking. Therefore, it is recommended to interpret the outputs of p-curve, and p-uniform analyses in the process of collecting evidence for publication bias (Simonsohn, Nelson, & Simmons, 2014a; Harrer et al., 2019). Before calculating the average effect size, evidence of publication bias was sought in the studies included in the meta-analysis. For this purpose, first, p-uniform analysis outputs were interpreted, followed by p-curve analysis outputs. Table 1 contains p-uniform publication bias statistics. The p-value for the p-uniform publication bias test in Table 1 is greater than 0.05. This does not mean that the null hypothesis is true; it indicates that there is not enough evidence to reject the null hypothesis. As a result, the p-value obtained from the p-uniform analysis means that there is not enough evidence for the existence of publication bias ($p = 0.088 > .0.05$).

Table 1. P-uniform publication bias test statistics

Test statistics	p-value
1.354	0.088

The p-uniform analysis gave the effect size and the confidence intervals. Table 2 contains the effect size statistics resulting from the p-uniform analysis.

Table 2. Effect size statistics regarding the p-uniform analysis

Effect size	Confidence Interval Lower Limit	Confidence Interval Upper Limit	Z	p-value	Number of Statistically Significant Studies
0.682	0.498	0.854	-5.315	.	46

Regarding the effect size and confidence intervals of the p-uniform analysis outputs in Table 2, the effect size (0.682) is in the range of 0.51-1.00, indicating a moderate effect. As a result, the effect size of the p-uniform analysis was determined to be moderate.

After the p-uniform analysis, the outputs of the p-curve analysis were interpreted. Figure 2 shows the p-curve publication bias analysis result. The observed p-curve includes 46 studies at a $p<0.05$ significance level, and 33 of these 46 studies are at a $p<0.025$ significance level. Since the p-value of the remaining nine studies is greater than 0.05, these studies were not evaluated within the scope of the p-curve. The blue line represents the observed p-curve, and the power estimate for the observed p-curve is 84% at a confidence interval of 74- 90%.

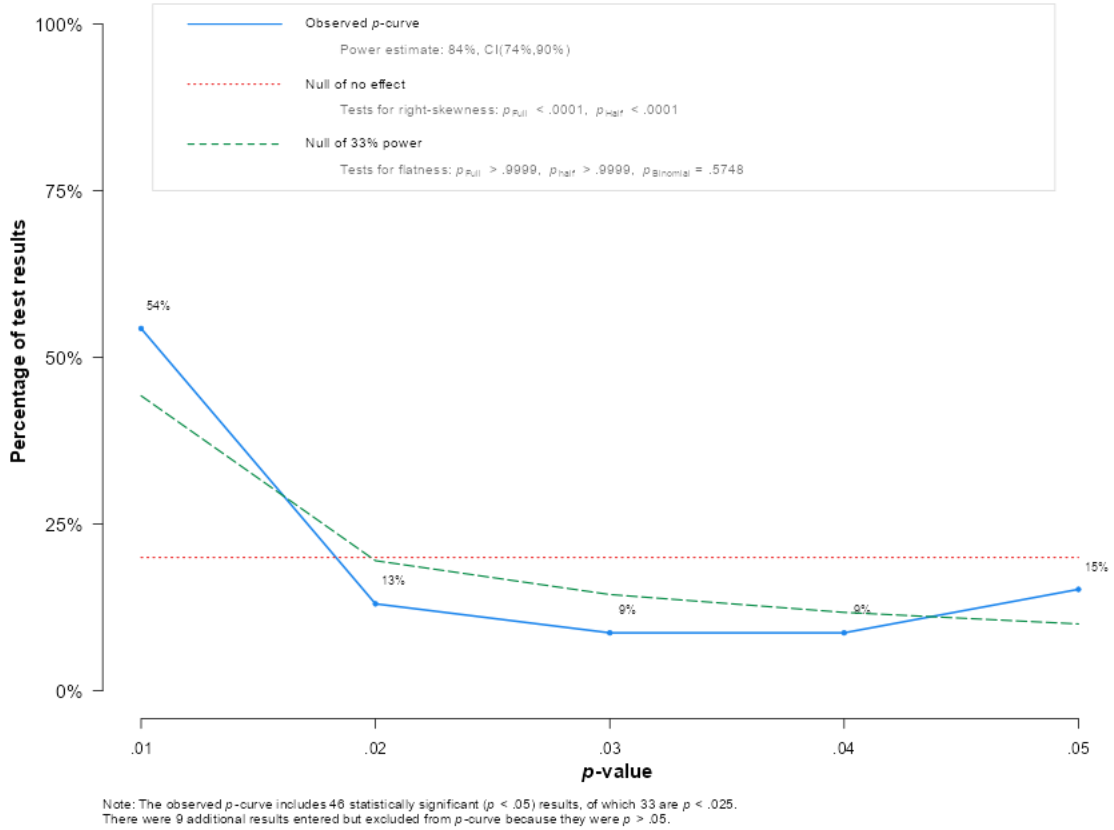

Figure 2. P-Curve

Mullen, Muellerleile, and Bryant (2001) stated that the results of meta-analysis studies have resistance against future studies, but only when the value calculated from the N/(5k+10) formula is greater than 1. This value was calculated for the experimental group (n=1530), the control group (n=1520), and the whole sample (n=3050) using the relevant formula. All of them were found to be greater than 1, which can be interpreted as very low publication bias. As a result of the holistic evaluation of the relevant values and the outputs of p-uniform and p-curve analyses, it is concluded that there is no evidence for publication bias.

Fail-Safe N, which is another way of defining the p-value obtained from the meta-analysis, was also examined. If the p-value of Fail-Safe N is lower than alpha ($p < 0.05$), the analysis is considered powerful and highly reliable. *Fail-Safe N* does not give information about the presence or absence of publication bias in any case (Borenstein, 2019). The p-value for Fail-Safe N was found to be less than alpha (0.05) (FSN = 10.221, $p < .05$), therefore it can be said that the research is powerful and highly reliable.

Following the evidence search for publication bias for the studies included in the sample, the average effect size under the preferred random effects model should be calculated considering the sampling frame. Table 2 shows the average effect size and the lower and upper values of the confidence interval.

Regarding Table 3, the average effect size was 0.905 with a standard error of 0.0891. The confidence interval's lower and upper limits are 0.726 and 1.084, respectively (95% confidence interval). Regarding the point estimation value of 1.90 and the confidence interval's lower and upper limits according to the effect size range suggested by Cohen et al. (2011), it can be said that RME-based teaching has a moderate effect on increasing academic achievement in mathematics courses. The point estimation value of the average effect size is positive, indicating that the result is in favor of the experimental group.

Table 3. Output of the random effects model

Model	Effect size	Standard Error	Z	p	Confidence Interval Lower Limit	Confidence Interval Upper Limit
Random Effects	0.905	0.0891	10.2	< .001	0.726	1.084

Another output of the meta-analysis is the forest plot, which is shown in Figure 3. Regarding the effect sizes of the studies included in the research, the smallest effect size is 0.14 (Uskun, Çil, & Kuzu, 2021), and the highest one is 4.25 (Kavuran, 2019). The holistic review of the studies' statistical results related to the effect size shows that all 54 studies that form the sample have positive effects. In Figure 3, the studies are located on the right side of the no-effect line, represented by the dashed line passing through zero. All studies show a benefit to the experimental group that received RME-based instruction.

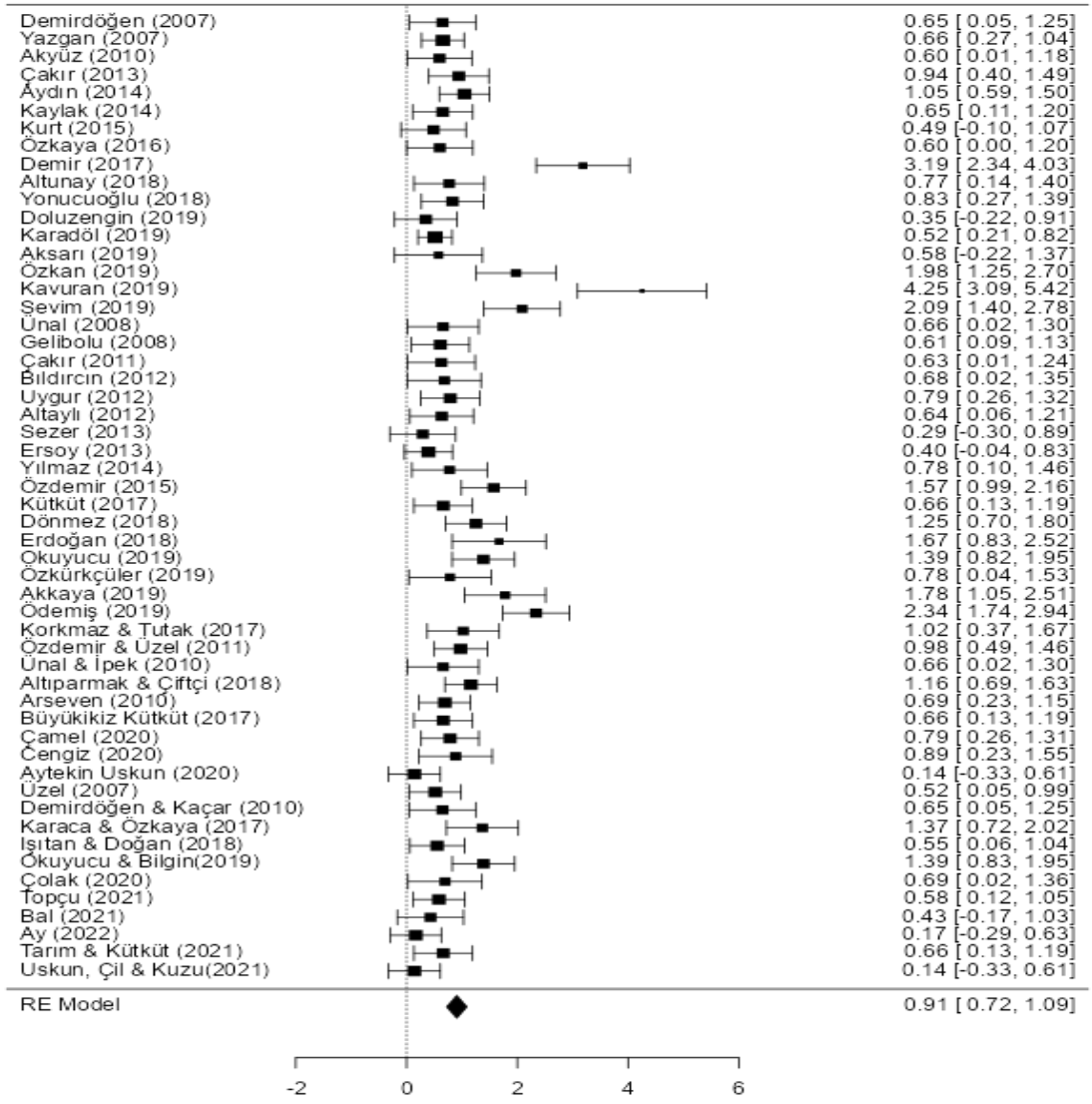

Figure 3. Forest Plot

After the forest plot, the heterogeneity statistics in Table 4. have been examined. The Q test result of Cochran is statistically significant (Q ~ (df = 53) ~ = 194.846, p = <.001). That is, the change in effect size is larger than the expected sampling error. According to this result, it can be said that the actual effect size varies according to the studies. The I^2 statistic, another statistic that provides information on heterogeneity, shows the rate of change in the observed effect size attributed to sampling error. In table 3, I^2= %83.09. It should be kept in mind that the I^2

statistic is a ratio, not an absolute measure of heterogeneity. It is recommended not to use the draft percentage ranges (Higgins & Green, 2011) in the literature when interpreting the I^2 value (Borenstein, 2019). I^2 provides information on the degree of inconsistency of the studies' findings within the meta-analysis. It reflects the extent to which confidence intervals obtained from different studies overlap (Borenstein et al., 2009). The I^2 value obtained from the meta-analysis is relatively high, which means that the studies' effect sizes have significantly changed. Besides Q and I^2 statistics, the lower and upper confidence limits of the effect sizes (0.726 and 1.084, respectively) provides information on how widely (based on the standard deviation) the effect sizes vary between populations. Considering the statistically significant result of the Q statistic, the relatively high I^2 value, and the estimation range's relative width, it can be said that there is heterogeneity that needs further analysis. Moderator analysis was used to explain the heterogeneity.

Table 4. Heterogeneity Statistics

I^2	sd	Q	p
83.09%	53	194.846	<0.001

Findings Regarding the Differentiation of Effect Sizes According to Publication Type

Table 6 displays the output of the moderator analysis carried out to address the second sub-problem of the research: "Regarding the studies comparing RME-based teaching with traditional teaching, is there a statistically significant difference between the effect sizes according to publication type?"

When Table 6 was examined, it was concluded that the effect sizes of the studies differed statistically significantly according to the type of study ($Q=177.767$, $p<0.05$). Accordingly, it can be said that whether the study type is a master's thesis, a doctoral thesis, or an article, it causes a change in the effect size. When the effect sizes in Table 6 are examined, it can be said that the publication (being master's thesis, doctoral thesis, or article) causes a difference in the effect size in favor of RME in terms of academic achievement. When the effect sizes of the categories in Table 6 are examined, it is striking that the publication type that causes the most variation in the effect size in favor of RME is a master's thesis.

Table 6. Moderator Analysis Results for the Publication Type

	Category	N	Effect size	Confidence Interval	df	Q_B	p
Publication Type	Master's Thesis	38	0.522	[0.149,0.896]	2	177.767*	<0.05
	Doctoral Thesis	6	0.371	[-0.034;0.776]			
	Article	10	0.392	[-0.074,0.820]			

Findings Regarding the Differentiation of Effect Sizes According to Sample Size

Table 7 displays the output of the moderator analysis carried out to address the third sub-problem of the research: "Is there a statistically significant difference between the studies' effect sizes according to the study's sample size ($n<30$, $n\geq30$)?"

When Table 7 was examined, it was concluded that the effect sizes of the studies differed statistically significantly according to the sample size ($n<30$, $n\geq30$) ($Q=194.087$, $p<0.05$). In other words, it can be said that the sample size being $n<30$ or $n\geq30$ causes a difference in effect size in favor of RME in terms of academic achievement. When the effect sizes of the categories in Table 7 are examined, it is striking that the sample size of less than 30 causes more variation in the effect size in favor of RME than being $n\geq30$.

Table 7. Moderator analysis results for the sample size

	Category	N	Effect size	Confidence Interval	df	Q_B	p
Sample size	n<30	19	0.610	[0.3428,0.8777]	1	194.087*	<0.05
	n≥30	35	0.255	[0.3154;0.8254]			

Findings Regarding the Differentiation of Effect Sizes According to the Level of Education

Table 8 displays the output of the moderator analysis carried out to address the fourth sub-problem of the research: "Is there a statistically significant difference between the studies' effect sizes according to the educational stage (primary school, middle school, high school) at which RME-based teaching is applied?"

When Table 8 was examined, it was concluded that the effect sizes of the studies differed statistically significantly according to the level of education ($n<30$, $n\geq30$) ($Q=157.563$, $p<0.05$). In other words, it can be said that the sample size being $n<30$ or $n\geq30$ causes a difference in effect size in favor of RME in terms of level of education. When the effect sizes of the categories in Table 8 are examined, it is striking that the middle school level causes more variation in the effect size in favor of RME than the primary school level and high school level.

Table 8. Moderator analysis results for the level of education

	Category	N	Effect size	Confidence Interval	df	Q_B	p
Sample size	Primary School	8	0.338	[0.3428,0.8777]	2	157.563*	<0.05
	Middle School	35	0.610	[-0.3154;0.8254]			
	High School	11	0.379	[0.3775,0.8254]			

Discussion and Conclusion

In this study, examining the effect of RMA-based teaching on the students' mathematics achievement in Turkey, 54 effect sizes were calculated for the meta-analysis sample. The calculated effect sizes were all positive. In the light of this finding, it has been concluded that in all studies, RME-based teaching was more effective than traditional methods in raising students' academic achievement in mathematics. These effect sizes varied between 0.14 and 4.25, and based on the random-effects model, the average effect size of 54 studies was 0.90, and the lower and upper limits of the confidence interval were 0.72-1.08. Regarding the holistic review of the effect sizes and the average effect size, it has been concluded that the studies have a moderate effect according to the classification of Cohen et al. (2011). Based on the findings of the effect size, it has been concluded that RME-based teaching has a moderate effect on students' academic achievement in mathematics compared to traditional methods.

In the meta-analysis study by Tamur, Juandi, and Adem (2020) in which they combined 95 effect sizes from 72 studies on realistic mathematics education in Indonesia, the combined effect size was calculated to be larger (1.104) than the combined effect size of this study. It is thought that the reason for the difference in the combined effect sizes obtained as a result of this research and the research of Tamur, Juandi, and Adem (2020) is due to the difference in internal and external criteria. Özdemir (2020), on the other hand, brought together the effect sizes obtained from 23 studies on realistic mathematics teaching and calculated the combined effect size as 1.048. Özdemir (2020) did not include articles published in scientific journals in the scope of his meta-analysis study, instead calculating effect sizes from postgraduate theses. This situation is thought to be the reason why the combined effect size obtained within the scope of this research is different from the study of Özdemir (2020). In another study, Kaplan et al. (2015) combined 12 effect sizes in their study in which they examined the effect of realistic mathematics education-supported instruction on mathematics achievement, and the overall effect size was calculated as 0.607. The combined effect sizes obtained by Kaplan et al. (2015) and the combined effect sizes obtained within the scope of this study show a "moderate level of effect. In the light of all these explanations, it can be concluded that the realistic mathematics education approach in mathematics teaching is effective in increasing the academic success of students.

When the literature is examined, it is striking that Eade and Dickinson (2006) concluded that mathematics teaching with realistic mathematics education acts in favor of students' mathematical development. Wubbels, Korthagen, and Broekman (1997) stated that teaching based on realistic mathematics education is a very effective method for students to achieve success.

In this study, based on the finding that teaching based on realistic mathematics education moderately affects mathematics achievement, teaching toward realistic mathematics education in the learning process should be encouraged, and guidance should be given to enable students to define and make sense of the problem situations they encounter in accordance with daily life, and to feel responsible for the solution of the problem.

A moderator analysis was also carried out to determine whether the effect sizes differed statistically significantly according to the variables "publication type, sample size, and level of education." As a result of Analog ANOVA and meta-regression performed within the scope of moderator analysis, it was concluded that all variables considered moderator variables within the scope of the study had an effect on the combined effect size.

As a result of the moderator analyses carried out within the scope of the study, it was concluded that the type of publication had a statistically significant effect on the effect size in favor of the master's theses. As a result of the meta-analysis study, in which Özdemir (2020) examined the effect of realistic mathematics education on mathematics achievement, he found the effect size to be medium for master's theses and high for doctoral theses. The fact that the samples of the studies within the scope of the research carried out by Özdemir (2020) are only those of Turkey can be considered the reason for the difference between the findings of the two studies. The absence of any other finding with which this result can be compared reveals the necessity of conducting more meta-analysis studies on the same subject within the scope of the relevant variable.

As a result of the meta-analysis study conducted by Tamur, Juandi, and Adem (2020), they concluded that "the combined effect size of the small sample group (30 or less) is significantly different from the combined effect size of the large sample group (31 or more). At the same time, this result overlaps with similar studies in the literature, including the sample size as a moderator variable in the meta-analysis (Turgut & Temur, 2017; Tumankeng, Yusmin, & Hartoyo, 2018). According to these studies, the effect of a small study group on a small sample is stronger than the effect of a large sample, and the relevant results obtained by the researchers are in line with the results of this study.

As a result of the moderator analyses carried out, it was concluded that the education level of the individuals forming the sample played a role in the change in the combined effect size. Turgut (2022) investigated the effect of realistic Mathematics Education on the mathematics attitudes of students studying in Turkey through meta-analysis and concluded that the education level did not cause a statistically significant difference between the groups. Turgut (2022) irestricted the meta-analysis to studies involving a Turkey sample. It is thought that this situation plays a role in the difference in the results of the relevant research. Chen, Shih, & Law (2020) and Juandi, Tamur & Kusumah (2022) concluded that the effect size of the samples formed by individuals with low education level is relatively higher than the groups with higher education level. Considering that students are confronted with problem situations that they can imagine within the framework of RME, it can be thought that this conclusion is possible (Van den Heuvel-Panhuizen & Drijvers, 2014). Students studying at higher levels, such as high school and university, may no longer need such a framework. More studies are needed to support this result.

Recommendations

In this study, based on the finding that teaching based on realistic mathematics education moderately affects mathematics achievement, teaching toward realistic mathematics education in the learning process should be encouraged, and guidance should be given to enable students to define and make sense of the problem situations they encounter in accordance with daily life, and to feel responsible for the solution of the problem.

Based on the findings of this study, which show that RME-based teaching has a significant impact on students' mathematics achievement, it is recommended that RME-based teaching be implemented in learning processes at all levels of education. Besides, support should be provided to ensure that students correctly define the problem situations they face in the learning process and that they will be responsible for the solutions they find.

RME-based teaching is a type of teaching that fits the constructivist education philosophy. The results of this study also support this view. In this context, it may be suggested to adopt RME-based teaching at all levels of education.

Considering the findings obtained as a result of the moderator's analysis, it can be suggested that education practitioners consider the variables of publication year, sample size, and education level.

Reporting the statistics required to calculate the effect size in all experimental and quasi-experimental studies examining the effects of RME-based teaching on students' mathematics achievement will allow future studies on similar subjects to be more valid and reliable.

In addition to this, it is recommended for meta-analysis studies to examine the effect of RME-based teaching on different variables such as students' anxiety, attitude, and motivation, in addition to their mathematics achievement.

Author (s) Contribution Rate
All authors contributed equally to the article.

Conflicts of Interest
There is no conflict of interest.

Ethical Approval
This metaanalysis study not need ethical approval in terms of the subject.

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The Effect of A Social Studies Course Supported by Stories on Critical and Empathetic Thinking Skills

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The Effect of A Social Studies Course Supported by Stories on Critical and Empathetic Thinking Skills

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Abstract

This study aims to examine the effects of a social studies course supported by stories on the critical and empathetic thinking skills of 4th-grade students. The study was conducted according to the intervention design, a method used in mixed-method research. The 10-week study was conducted in two public schools in Gaziantep in the 2018-2019 academic year. The Critical Thinking Achievement Test developed by Eğmir and Ocak (2016) and the Empathy Scale for Children developed by Bryant and adapted to Turkish by Yılmaz-Yüksel (2004) were used to collect quantitative data. Semi-structured interview forms, semi-structured observation forms, and a research diary were used to collect qualitative data. The qualitative data were analyzed by content analysis and descriptive analysis. Quantitative data were analyzed by Shapiro-Wilks test, *T*-test for unrelated measurements, *T*-test for related measurements, and Wilcoxon Signed Rank Test. In addition, the effect size of the experimental intervention was calculated using eta squared (n^2) for parametric tests and Pearson's Correlation Coefficient (r) for non-parametric tests. The significance level was taken as .05 for statistical analysis. The study results show that using stories in the social studies course significantly impacted the development of students' critical and empathetic thinking skills in the experimental group and the experimental intervention had a high effect size. In addition, the students' opinions suggest that cognitive and affective features, language skills, and content such as empathy, interpretation, deduction, fast and meaningful reading, analyzing, knowledge acquisition, inferring, effective responding, and listening can be developed by enriching the social studies courses with stories.

Keywords: Empathetic thinking skill, Critical thinking skills, Mixed method research, Social studies education, Story.

Introduction

Social studies is an interdisciplinary subject that focuses on people and their lives, aims at effective citizenship education, and uses sources of information formed by social sciences (Almerico, 2013; Doğanay, 2003, p. 16; Engle & Ochoa, 1988, p. 13; Barr, Barth, & Shermis, 1977, p. 69; Martorella, 1998, p. 7; Wolk, 2003). The primary aim of a social studies course is to make the students knowledgeable and considerate by understanding the local and wider world. The use of thinking skills in this process is also important (Barr, 1997; Tindall, 1996). Social studies courses are cultural laboratories. In designing courses, it is necessary to consider that children make sense of the social world using their cultural knowledge (Jones, Pang, & Rodríguez, 2001). This study emphasizes examining students' critical and empathetic thinking development in a social studies course supported by one literary genre, stories.

All kinds of information and resources related to these fields provide important teaching materials for social studies, including written and oral literary works. The inclusion of literary genres in a social studies course provides the opportunity to share interdisciplinary information (Kaymakçı, 2013); supports students' learning through experience (Coşkun Keskin, & Otluoğlu, 2012), provides students with the opportunity to discuss and to develop their reflective thinking, and provides various cognitive and affective benefits. Literary genres such as stories, epics, poetry, fairy tales, folk songs, etc., are powerful materials that enable thematic subjects to be taught, engender various values and authentic experiences, and make connections between the real world and the subject content.

Literacy in Social Studies Course: Stories and Their Contributions to Learning

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Stories are formed with artistic creativity and combine elements such as event, setting, time, and character. Stories have a privileged place among different types of knowledge and are carriers of values and knowledge that can be used both at and outside school (Hensel & Rasco, 1992). Stories can also be used in social studies courses because they complete the teaching process and facilitate understanding (Common, 2012; Hwang, 2004). Stories are the essence of communication (Mathis, 2011) and bring meaning to events that textbooks cannot deliver (Tindall, 1996). Stories can be used to explain facts, convey moral values, develop culturally appropriate behaviors, preserve cultures, and solve personal problems (Stein, 1982). Stories allow the discovery of social studies topics, inform about the past, support the present and shape the future (Combs & Beach, 1994; Harris, 2007). Shuyi (2017) states that stories are important in a pedagogical context. In this context, he states that stories can be used to teach all kinds of content, from simple to complex topics, and can be used at every stage of the course.

When stories are used effectively in social studies courses, learners develop their citizenship knowledge and skills and increase their knowledge of concepts and generalizations. Stories can arouse interest in both the past and the present, develop students' self-confidence, link the content and skills to be learned, inspire empathy and cultural understanding, encourage students to query the reliability of sources, and help them to acquire higher-order thinking skills (analysis, synthesis, creating, problem-solving, decision-making, etc.) (Alkaaf, 2017; Combs & Beach, 1994; De Young & Monroe, 1996; Demircioğlu, 2008; Godsir & Rowel, 2010; Goodwin & Jenkins, 1997; Hwang, 2004; Sanchez, 2005; Shuyi, 2017; Tindall, 1996). Stories also link old learning and new learning (McGowan & Guzzetti, 1991) because, through stories, individuals can gain insights about themselves, humanity, and the world in which they live (Hwang, 2004).

Picken (2000) believes that stories are an effective educational tool because they are credible, unforgettable and entertaining. He also argues that learning stories is about process and product, and that awareness and critical reflection develop in this learning process. Jewett (2007) states that the heart of social studies is questioning and that students can explore multiple perspectives by asking questions about stories, searching for evidence, analyzing findings, and preparing complex answers. Stories are related to cultural understanding, and providing this relationship is a part of critical thinking (Setyarini, Muslim, Rukmini, Yuliasri, & Mujianto, 2018). Critical thinking is an important skill for citizenship education, which is one of the main objectives of social studies courses. It is, therefore, necessary to include teaching practices to develop this skill.

Critical thinking is described as the process of judgment and decision-making about what to believe and what action to take (Ennis, 1991; Fisher, 1995). Paul (1995) states that questioning can be used to develop critical thinking, search for assumptions, evidence and reasons, determine perspective or point of view, investigate results and query the question itself. Stories relating to real life can also help students make sense of course content, make inferences, and to question.

Savage and Savage (1993) state that students can develop empathy by understanding the differences between people with the stories used in the social studies course. Empathy is the attempt to understand another's feelings and thoughts by putting oneself in their place (Kabapınar, 2003, p. 171). Empathetic understanding brings people closer to each other, facilitating communication (Yüksel, 2004) and can be developed through Education in critical thinking. Coşkun Keskin (2016) argues that students can experience the events from the heroes' eyes through the activities, improving empathy skills. Thus, they can actively engage in learning, understand the subject, and eliminate stereotypes by integrating their feelings and thoughts with their knowledge. Stephan and Finlay (1999) refer to two types of empathy, cognitive and affective. They emphasize that empathy has a major impact on behavior and attitudes. Social empathy is used in social studies courses to understand the current situations of today's people and society. A student who has gained social empathy skills can make inferences towards himself and the society in which they live and create a sensitive and tolerant self (Kabapınar, 2003, p. 171-172).

The National Council for Social Studies (NCSS, 2016) states that it will be significant only when a social studies course is blended with information gathering and analysis, questioning and critical thinking, communication, data analysis, disciplinary literacy, and multidisciplinary awareness. Looking at the social studies curriculum being applied in Turkey, it aims to develop critical and empathetic thinking skills. In addition, The Ministry of National Education (2017) state that social studies courses need to be supported by literary works such as folk stories, folk songs, poetry, etc. As a literary genre, building stories suitable for the students' level and preparing them in accordance with the objectives of the curriculum can serve to achieve target attainments. For this reason, stories that will be used as learning resources in social studies Education should be in line with the general objectives of Turkish National Education and the social studies curriculum and directly compatible with target achievements (Ünlü & Ay, 2016, p. 196).

Various studies have been carried out regarding children's literature and the use of literary genres in social studies courses. These studies have been made on women's studies (Styer, 1984); higher-order thinking skills such as critical thinking, reasoning, problem-solving and decision-making (Heinly & Hilton, 1982; Riecken & Miller, 1990); determination of teacher views (Beldağ & Aktaş, 2016; İbret, Karasu Avcı, Karabıyık, Güleş & Demirci, 2017); examination of academic achievement (Tekgöz, 2005); analysis of textbooks (Kaymakçı, 2013); the tendency to empathy (Akyol, 2011); and values education (Eryılmaz & Çengelci Köse, 2018; Demircioğlu, 2008). Other studies related to the use of stories in social studies courses have been conducted in the contexts of academic success (Bacak, 2008; Seçgin & Doğan, 2019; Tindall, 1996); value education (Gedik, 2012; Karagözoğlu, 2018); conceptual understanding (Picken, 2012); creative thinking (Bacak, 2008; Şekerci, Doğan, & Kabapınar, 2018); interest, attitude effect and recall level (Akıncı & Gönül, 2016; Tindall, 1996); teacher views (Akin, 2016; Dutt-Doner, Allen, & Campanaro, 2016); and teaching suggestions related to the use of stories (Shuyi, 2017). However, no study with experimental research process has been conducted on the effect of using stories in social studies courses on the development of 4th-grade students' critical thinking and empathy skills. This study assesses the contribution that stories can have on the development of critical thinking and empathy skills. In this context, the study's main question is as follows: "Are students' critical and empathetic thinking skills affected in a social studies course supported by stories?" The main purpose of the study is to determine whether students' critical and empathetic thinking skills develop in a social studies course supported by stories. For this main question, the following sub-questions are posed:

1. Do pre-test and post-test total scores of students' critical and empathetic thinking skills show a significant difference in a social studies course supported by stories?
2. What is the effect of using stories in a social studies course on developing students' critical and empathetic thinking?
3. What are the opinions of the students in the experimental group about the social studies course before and after the experimental procedure?

Method

Research Design

This study was conducted in accordance with ethical rules, and Hasan Kalyoncu University Social and Human Sciences Ethics Committee Decision was taken for this study on 31.12.2020, numbered E - 804.01-2012310005. This study examines the effect of a social studies course supported by stories on 4th grade students' critical and empathetic thinking skills through a mixed method approach. Mixed methods require the collection, analysis, and integration of qualitative and quantitative data in order to understand better the purpose of the study (Creswell, 2017, p. 3; Plano Clark & Ivankova, 2018, p. 4). In the study, qualitative and quantitative data on student experiences is collected and interpreted from a broad perspective to provide detailed information. The study was conducted according to the intervention design, a method used in mixed method research. The intervention design aims to work on the research problem by adding qualitative data to the research process through the experimental or intervention program (Creswell, 2017, p. 43). This study included qualitative data in the process of pre-test and post-test experimental intervention. While the quantitative dimension of the study was designed according to pre-test and post-test control group quasi-experimental research, the qualitative dimension was designed according to case studies. The design flow of the intervention mixed study is shown in Fig. 1:

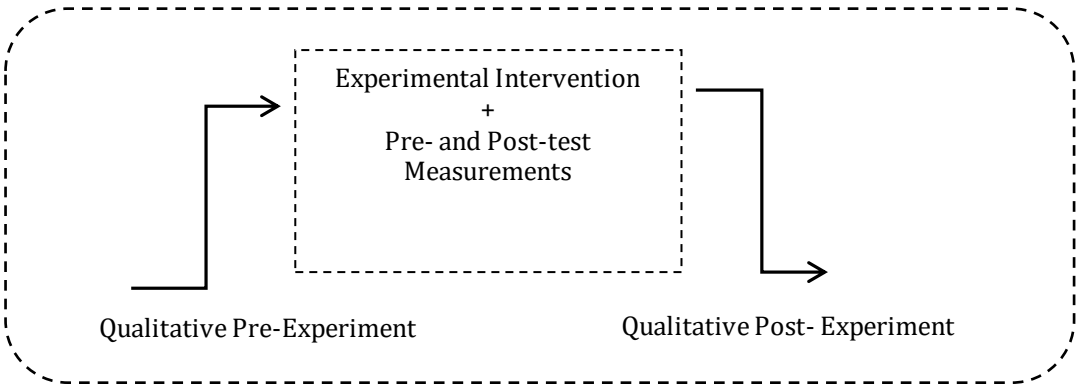

Figure 1. Intervention mixed pattern flow of research

As shown in Figure 1, quantitative and qualitative data were collected before and after the experimental procedure. The following section explains the quantitative and qualitative dimensions of the study.

Quantitative Dimension of the Study

The quantitative dimension of the study was designed according to the quasi-experimental design of the pre-test and post-test control group. Quasi-experimental studies are used in cases where groups are not formed impartially or randomly. This design attempts to match certain variables of two available groups (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2014, p. 208; Gürbüz & Şahin, 2018, p. 380). In this study, no impartial selection was made in the experimental and control groups. Potential inequality between the two groups was controlled by equalizing the pre-tests related to the independent variables (see Table 3). The pre-test and post-test control group quasi-experimental design model of the study is given in Table 1.

Table 1. Pre-test and post-test control group quasi-experimental model of the study

Groups	Pre-test	Procedure	Post-Test
E	M1	Social Studies Teaching Supported by Stories	M2
C	M3	Social Studies Curriculum of Ministry of National Education	M4

(E: Experimental Group; C: Control Group; M1: Pre-test measurements of the experimental group; M2: Post-test measurements of the experimental group; M3: Pre-test measurements of the control group; M4: Post-test measurements of the control group)

In the experimental group, stories were used to support the social studies course, and in the control group, the 4th-grade social studies curriculum was followed. In both groups, pre-test and post-test measurements were taken relating to critical and empathetic thinking skills.

Qualitative Dimension of the Study

The qualitative dimension of the study was designed as a holistic single case study. Holistic single case studies are used to confirm or refute a theory formulated through a single analysis unit (Yıldırım & Şimşek, 2018, p. 300). This study focused on the situation assessment concerning the impact of the social studies course supported by stories through data obtained from the interviews and a research diary. The holistic single-case design of the study is given in Table 2.

Table 2. Holistic single case design of the study

Group	Qualitative Data	Process	Qualitative Data
Experiment	Pre- Interview	Social Studies Teaching Supported by Stories Qualitative Data: Research Diary	Post-Interview

Participants

This study was carried out with 38 4th-grade students in two public schools in the Oğuzeli district of Gaziantep in the 2018-2019 academic year. Criterion sampling, a purposeful sampling type, was used to determine the study groups. The key criterion was determined as not enriching the social studies courses by stories in the experimental and control group, not having a learning process to bring critical and empathetic thinking skills achievements to the students. As do many schools, the schools selected in the study provide full-time schooling. To prevent students in the experimental and control groups influencing each other, selecting the two groups from two different schools was decided. The experimental group was carried out in one school and the control group in another. Of the 19 students in the experimental group, 11 were female and 8 were male; of the 19 students in the control group, 12 were female and 7 were male.

Before the application of research, the Critical Thinking Achievement Test (CTAT) and Empathy Scale for Children (ESC) were applied to both groups to assess and compare the critical and empathetic thinking skill levels of the students in the experimental and control groups. First, whether there was a significant difference between the students' pre-test scores was checked. Büyüköztürk (2018) assumes that if the sample sizes are 30 and above, the distributions will not deviate too much from the normal range. Non-parametric tests were performed in this study since the sample size was 19 in both the experimental and control groups. *The Mann-Whitney U Test* was used to determine whether there was a significant difference between the CTAT and ESC pre-test mean scores of the experimental and control groups, and the findings are shown in Table 3:

Table 3. Mann-Whitney U test for independent samples' results of the CTAT and ESC pre-test average scores of the experimental and control groups

Measures	Groups	N	Mean Rank	Sum of Ranks	U	p
CTAT	Experiment	19	18.21	346.00	156.00	.470
	Control	19	20.79	395.00		
ESC	Experiment	19	19.84	377.00	174.00	.848
	Control	19	19.16	364.00		

*p< .05

Table 3 shows that there was no significant difference between the CTAT [U=156.00, p <.05] and ESC [U=174.00, p <.05] pre-test average scores of the experimental and control groups. 'Therefore, it is possible to say that the students' critical and empathetic thinking skills in the experimental and control groups were equivalent.

During the qualitative data collection process, six students (three girls and three boys) were interviewed. The students were selected according to their low, average, and high academic success in social studies determined by information obtained from their class teachers. The main criterion for selecting the students by their academic success was the research findings showing that academic success was more frequent in thinking-friendly classrooms (Akbıyık & Seferoğlu, 2006; Dolapçıoğlu, 2019). Since students' critical thinking and empathy skills were investigated in this study, student selection was primarily based on academic success. While three of these interviewed students indicated social studies was among their favorite courses, the other three did not include social studies as a favored course.

Data Collection Tools

While the quantitative data was collected through the Critical Thinking Achievement Test (CTAT) and Empathy Scale for Children (ESC), the qualitative data were collected through a semi-structured interview form and research diary. Information about these tools is presented below:

Critical Thinking Achievement Test (CTAT): The CTAT, developed by Eğmir and Ocak (2016) and applied to 5th-grade students, was used to determine the effect of a story-based social studies course on critical thinking skills. The achievement test consisted of 25 items of multiple-choice questions, each with four options. The items in the achievement test were prepared with respect to the sub-skills of critical thinking, such as "understanding the problem, distinguishing subjective and objective judgments, analyzing inferences, asking questions appropriate for the purpose, evaluating inferences, determining the reliability of a source". The results showed the KR-20 and KR-21 values related to the whole test as 0.61 and 0.63; the difficulty index and discrimination index were calculated as 0.37 and 0.32, respectively. These results show that the achievement test is of moderate difficulty and has a good level of discrimination (Eğmir & Ocak, 2016). *Critical Thinking Achievement Test* was applied to a total of 176 students studying at the 4th grade level in schools located in Gaziantep city center. Of these study participants, 100 (57%) were girls, and 76 (43%) were boys. As a result of the analyses made, the KR-20 and KR-21 values for the whole test were .53 and .49, respectively; the difficulty index was calculated as 0.39 and the distinctiveness index as 0.28.

Empathy Scale for Children (ESC): The ESC, developed by Bryant (1982), applied to 4th-grade students and adapted to Turkish by Yılmaz- Yüksel (2004), was used to determine the effect of a story-based social studies course on empathetic thinking skills. Consisting of 20 items, the scale's validity was based on expert opinions, and its construct validity was determined by factor analysis. The reliability coefficients of the whole measurement tool were calculated as Cronbach Alpha .70 (Yılmaz-Yüksel, 2004). Cronbach (1990) states that the coefficients between 0.60 and 0.70 are sufficient for reliability.

Semi-Structured Interview Form: Interviews were conducted to determine the students' views on a social study course taught through stories. Interviews were carried out through a semi-structured interview form developed by the researchers. For the semi-structured interview form, expert opinions (from 1 social studies expert, two assessment and evaluation experts, two child development experts, one Turkish language and literature expert, and three curriculum development and teaching experts) were taken. The relevant form was used after checking its suitability regarding the sub-goals, student development period, and language. There were three open-ended questions in the interview form to determine students' opinions before and after experiencing the social studies course. Care was taken to ensure that the questions prepared for the interview form were easy and understandable and did not direct the student. Some of the questions in the interview form are as follows: *(1) What do you think*

and feel about the social studies lesson?; (2) What do you think about the activities you do in the social studies lesson? etc.

Semi-Structured Observation Form: The semi-structured observation form was created according to the factor dimensions of the scales of critical thinking skills and empathic thinking skills. In addition, the "other" dimension was added to the semi-structured interview form to encode possible sub-skills related to critical and empathic thinking skills. Expert opinions (twoassessment and evaluation experts, and 3 curriculum development and teaching experts) were taken for the semi-structured observation form. Researchers assumed the role of non-participant observer and continued their observations throughout the application. The data obtained from the semi-structured observation form were converted into findings.

Research Diary: Researcher diaries are a benefit in the data collection process. Researcher diaries generally include descriptive and reflective notes on researcher's thoughts, opinions, feelings, and the research process (Johnson, 2005; Yıldırım & Şimşek, 2018). The researchers kept research diaries during the 8-week application. The researcher recorded the experiences, feelings, and thoughts about the learning environment supported by stories in the diaries. Those diaries also involved the atmosphere of every lesson, the whole process, the students' feelings, perceptions, behaviors, and the researcher's feelings and thoughts. The notes in the researcher's diary were used to support the data analysis and interpretation process.

Application Process and Data Collection

The teachers, who carried out the practices in the control and experimental groups, carried out the processes independently and unaware of each other, and were followed throughout the process. The primary school teacher carried out the control group's teaching process and followed the applied social studies curriculum. The primary school teacher of the control group taught the lesson with the strategies, methods and techniques that she determined in accordance with the education and training programs. The student continued the normal teaching process with the activities in the textbook. In the experimental group, eight story-based social studies activities developed by the researchers concerning learning domains were applied. The classroom teacher also carried out these teaching activities. Demir & Akengin (2014, p. 11-12) states that stories used in social studies courses should connect with the learning domains and serve the goals of the learning domain. In this context, the stories used in the study were prepared by taking expert opinions in line with the general aims, learning domains, and achievements of the social studies course. This process aimed to reflect all the subjects in the learning areas well, not to support a single learning area with stories. The topics selected from the learning areas were used as the subject of the Story. Therefore, an activity supported by stories was written as an example of every learning area. Applications towards critical thinking sub-skills and empathetic thinking, such as "understanding the problem, distinguishing subjective and objective judgments, analyzing inferences, asking questions appropriate for the purpose, evaluating inferences, determining the reliability of a source" were included in each activity. The researchers informed the classroom teachers of the content of the activities and their application in class and were present as observers during the lessons. The program carried out during the experimental process is shown in Table 4.

Table 4. Weekly content distribution of the study related to the experimental process

Week/ Month	Application
1. Week/ February	Pre-test application of Empathy Scale for Children and Critical Thinking Achievement Test and pre-interview
2. Week/March	The Cost of Wrong Anger (Learning Domain: Individual and Society)
3. Week/March	The King is Always King Anywhere (Learning Domain: Effective Citizenship)
4. Week/March	Compassion Comes to the Light (Learning Domain: Effective Citizenship)
5. Week/March	From Museum to Electronic Mail (Learning Domain: Culture and Heritage)
6. Week/April	Baby Bat (Learning Domain: Production, Distribution, and Consumption)
7. Week/April	Message from a Factory in Space to Humans (Learning Domain: People, Places, and Environments)
8. Week/April	Şehat (Learning Domain: Global Connections)
9. Week/April	Free Robot (Learning Domain: Science, Technology and Society)
10. Week/May	Post-test application of Empathy Scale for Children and Critical Thinking Achievement Test and post-interview

The experimental process was carried out in 10 weeks with the pre-tests and post-tests. The data collection tools were applied in the first and last week and the experimental study was performed in the remaining 8 weeks. The measurement applications were simultaneously applied to the experimental and control groups.

Data Analysis

The qualitative data was analyzed by content analysis and descriptive analysis. The researchers determined the codes for content analysis through selective coding and themes were created. The data were transferred to the computer environment and a 12-page data set was obtained. While presenting the findings, direct quotations were made and students were represented as (P1), (P2)… (P19).

The quantitative data was analyzed using the IBM SPSS 23 package program. Descriptive statistics related to the students' total scores from the CTAT and ESC tools were interpreted on the arithmetic mean, standard deviation, minimum, maximum, standard error, kurtosis, and skewness values. An appropriate statistical technique was determined to calculate the significance between the difference scores obtained from the measurement tools before and after the application. No missing values were found in the data sets, and Z standard values were found in the range of [-3, +3].
Since the sample sizes were less than 30, *Wilcoxon Signed Rank Test* for related samples and *Mann-Whitney U Test* for unrelated samples were performed to measure the significant difference between the pre-test and post-test scores. For non-parametric tests, the effect size was calculated through the Pearson Correlation Coefficient (r), and r values were interpreted as small for .10, medium for .30, and large for .50 as the effect size (Field, *2009, p. 570). A significance level of 0.05 was used for statistical analysis.*

Validity and Reliability

Teddlie and Tashakkori (2015, p. 246) state that mixed-method research is used in many studies because it allows multiple data collection techniques and thus removes the blur between qualitative and quantitative data collection strategies of the data triangulation. Data triangulation is accepted as a validation procedure, as Creswell and Miller (2000) state. In this study, validity was strengthened by using quantitative and qualitative data collection tools such as achievement tests, scale, interview forms, observation forms, research diaries, and the subject of the study was investigated thoroughly. It is suggested to support the quantitative data with qualitative findings, which would increase the validity of the research. The consistency of the qualitative data obtained from the interviews with the students and the researcher's diaries reinforces the qualitative findings and predicts the quantitative findings.

Expert opinions were obtained regarding the validity, comprehensibility, and applicability of the activities and interview questions used in the study. A minimum significance rate of .75 can be sought for content validity when the opinions of 9 domain experts are taken (McKenzie, Wood, Kotecki, Clark, & Brey, 1999). In this study, it was determined that the opinions of the domain experts had high validity values of between .80 and .90.

The data obtained from the interview was examined through content analysis. The coder reliability among the researchers was controlled by the formula of "P (Reconciliation Percentage%) = [Na (Consensus) / Na (Consensus) + Nd (Dissensus)] X 100" (Miles & Huberman, 1994, p. 64). The fit was found to be .90. According to Miles and Huberman (1994), at least 80% fit should be sought for coder reliability. The results of the study regarding coder reliability have indicated that a good fit was achieved. The views obtained from the interview and research diaries of the prospective teachers were used as direct quotations and the students were given symbols such as P1, P2… P6.

Ethics in the Study

Before starting the study, researchers obtained permission from the relevant institutions; teachers and students were informed and their consent was taken. Since most schools in the province and district where the application was carried out provide full-time schooling, experimental and control groups were selected from different schools to prevent the groups from being influenced by each other. Social studies activities supported by the stories were developed by the researchers, shared with the classroom teacher every week before the application, and discussed the activities. The researchers were the non-participant observers and regularly visited the classroom for two weeks until students got used to the activities. Classroom teachers conducted activities in the study in the experimental and control groups, and the researchers did not interfere with the applications. The researchers provided the worksheets of the activities used in the study and no financial support was requested from the students and teachers.

Results

Results of the Quantitative Data

The analysis of the quantitative data obtained from the CTAT and ESC are presented respectively.

Critical Thinking Achievement Test Pre-test Post-test Findings

Descriptive statistical values of the total scores of the applied CTAT to the students before and after the experimental procedure are given in Table 5.

Table 5. Descriptive statistics results of CTAT

G	Measures	N	$\overline{X}$	SD	Min.	Max.	$SE_{Skewness}$	$SE_{Kurtosis}$
E	Pre-test	19	6.10	2.66	2	11	.406 (.524)	-.864(1.014)
	Post-test	19	9.36	2.94	6	15	.337 (.524)	-1.076(1.014)
C	Pre-test	19	6.73	3.17	2	16	1.140 (.524)	3.005 (1.014)
	Post-test	19	6.89	3.03	3	16	1.298 (.524)	3.501 (1.014)

(G: Groups; E: Experimental Group; C: Control Group; Min.: Minumum; Max.: Maximum; SE:Standart Error)

As shown in Table 5, the critical thinking achievement scores increased in the social studies course post-test results supported by stories applied to the experimental group. In the control group where the current social studies curriculum was applied, the critical thinking achievement scores were in favor of the post-test. *The Wilcoxon Signed Rank Test* was used to check whether the differences between both groups' pre-test and post-test scores were significant. The analysis results are presented in Table 6 and Table 7, respectively.

Table 6. The Wilcoxon signed rank test results of the experimental group CTAT pre-test and post-test average scores

Post-test/Pre-test	N	Mean Rank	Total Rank	z	p
Negative Rank	0	.00	.00	-3.734*	.000**
Positive Rank	18	9.50	171.00		
Equal	1				

*Based on negative ranks **p<.05

Table 6 shows that there is a significant difference between the pre-test and post-test scores of students' critical thinking skills achievements [z = -3. 734, p <.05]. To examine the practical significance of this statistically significant difference, the *Pearson Correlation Coefficient (r)* was calculated, and the result of 0.60 was reached. In this context, it can be said that the social studies course supported by stories greatly affects critical thinking skills.

The Wilcoxon Signed Ranks Test was used to determine whether there was a significant difference between the average scores of the CTAT pre-test and post-test applied to the control group. These results are given in Table 7.

Table 7. The Wilcoxon Signed Rank Test results of the control group CTAT pre-test and post-test average scores

Post-test/Pre-test	N	Mean Rank	Total Rank	z	p
Negative Rank	3	4.67	14.00	-.586*	.558**
Positive Rank	5	4.40	22.00		
Equal	11				

*Based on negative ranks **p<.05

According to the findings in Table 7, no significant difference was found between the control group's average scores of critical thinking in the pre-test and post-test [z = -. 586, p> .05]. *The Mann-Whitney U Test* for unrelated samples was used to determine whether there was a significant difference between the critical thinking skills post-test scores in the experimental and control groups. The findings are presented in Table 8.

Table 8. Mann-Whitney U Test for Independent Samples' results of the CTAT post-test average scores of the experimental and control groups

Measures	Groups	N	Mean Rank	Sum of Ranks	U	p
CTAT	Experiment	19	23.87	453.50	97.500	.014*
	Control	19	15.13	287.50		

* p<.05

The findings in Table 8 show a significant difference in favor of the experimental group in the post-test scores of critical thinking skills [U=156.00, p <.05]. Accordingly, it can be inferred that the social studies course supported by stories improves students' critical thinking skills.

Empathy Scale for Children Pre-test and Post-test Findings

The descriptive statistical values of the total scores of the ESC applied to the students before and after the experimental procedure are given in Table 9.

Table 9. Descriptive statistics results of ESC

G	Measures	N	$\overline{X}$	SD	Min.	Max.	$SE_{Skewness}$	$SE_{Kurtosis}$
E	Pre-test	19	12.15	3.33	5	18	-.374 (524)	-.376 (1.014)
	Post-test	19	14.15	3.04	8	18	-.724 (524)	-.079 (1.014)
C	Pre-test	19	11.94	3.35	6	18	-.146 (524)	-.796 (1.014)
	Post-test	19	11.78	3.40	6	18	.013 (524)	-.791 (1.014)

(G: Groups; E: Experimental Group; C: Control Group; Min.: Minumum; Max.: Maximum; SE: Standart Error)

Table 9 shows that the empathetic thinking skills scores of the students in the experimental group before and after the experimental procedure are in favor of the post-test in the social studies course supported by stories. In the control group where the current social studies curriculum was applied, the empathetic thinking skill post-test scores were lower than the pre-test scores. The differences between the pre-test and post-test scores of both groups were statistically analyzed to determine whether these differences were significant or not. The Wilcoxon Signed Ranks Test was used to determine whether there was a significant difference between the average scores of the ESC pre-test and post-test applied to the experimental and control group, and the results are given in Table 10.

Table 10. The Wilcoxon Signed Rank Test results of the experimental group ESC pre-test and post-test average scores

Post-test/Pre-test	N	Mean Rank	Total Rank	Z	p
Negative Rank	1	7.50	7.50	-3.154*	.002**
Positive Rank	15	8.57	128.50		
Equal	3				

The findings in Table 10 show a significant difference between the average scores of the students in the experimental group's critical thinking pre-test and post-test achievements [z = -3.154, p> .05]. Pearson Correlation Coefficient (r) statistic (effect size) was calculated in order to examine the significance of this statistically significant difference in practice, and it was found to be .57. In this context, it is possible to say that the social studies course supported by stories has a significant effect size on empathetic thinking skills. The Wilcoxon Signed Rank Test was used to determine whether there was a significant difference between the ESC pre-test and post-test average scores applied to the control group. The results are presented in Table 11.

Table 11. The Wilcoxon Signed Rank Test results of the control group ESC pre-test and post-test average scores

Post-test/Pre-test	N	Mean Rank	Total Rank	Z	p
Negative Rank	5	4.60	23.00	-.061*	.951**
Positive Rank	4	5.50	22.00		
Equal	10				

There was no significant difference between the empathetic thinking pre-test and post-test average scores of the students in the control group [z = -.061, p> .05]. *The Mann-Whitney U Test* for unrelated samples was performed to determine if there was a significant difference between the empathetic thinking skills post-test scores of the students in the experimental and control groups, and the findings are given in Table 12:

Table 12. Mann-Whitney U Test for Independent Samples' results of the ESC post-test average scores of the experimental and control groups

Measures	Groups	N	Mean Rank	Sum of Ranks	U	p
ESC	Experiment	19	23.47	446.00	105.00	.027*
	Control	19	15.53	295.00		

* p<.05

The findings in Table 12 suggest a significant difference in favor of the experimental group in the empathic thinking skills post-test scores [U=105.00, p<.05]. Thus, it can be said that the empathic thinking skills of students improved after the social studies courses supported by stories.

Results of The Quantitative Data

Interviews were carried out with the students before and after the experimental procedure, and a researcher's diary was kept during the procedure. The related findings are as follows.

Perceptions About Social Studies Course

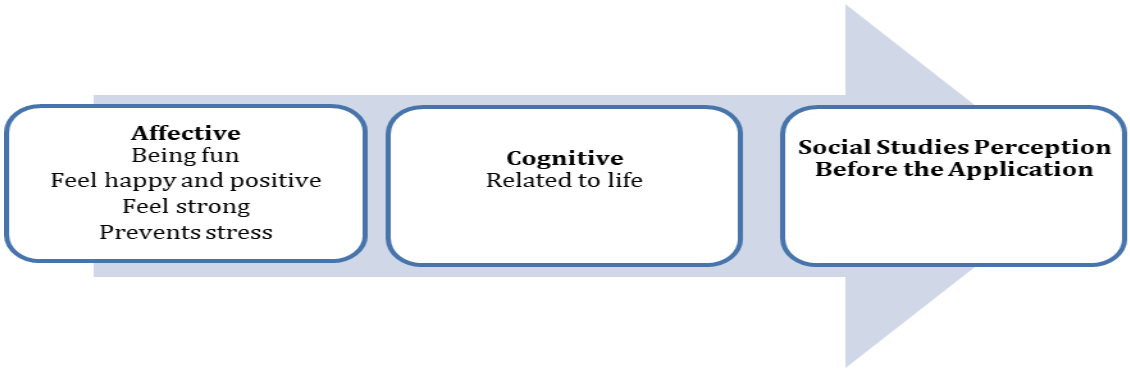

Figure 2. Social studies perception before the application

Before the application, the students' opinions of their social studies courses were collected. After the analysis, the students' opinions were classified into two themes, affective and cognitive features. In terms of affective features, students' opinions indicate that the social studies course is fun (P1), makes them feel happy and positive (P1, P2, P3, and P6), makes them feel strong and prevents stress (P4). In addition, in terms of cognitive features, the social studies course is related to life (P5). The following are example quotes related to these findings:

> *"When I choose to study in this course, I am happier. I think it is because this lesson is more fun than the others."* (P4)
> *"When I take this course, I feel stronger and less stressed." (P4)*

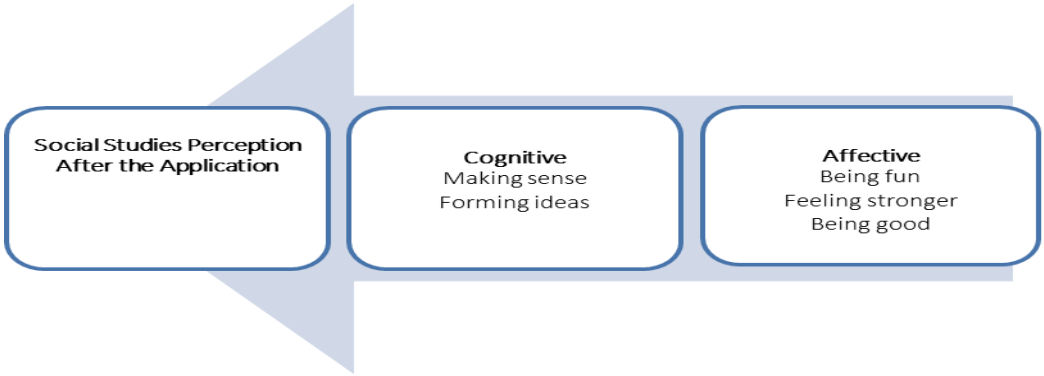

Figure 3. Social studies perception after the application

After the experimental procedure, the students were again asked their opinions about their social studies course. The findings obtained were classified as affective and cognitive features. The analysis found that the story-based social studies course is more fun (P1, P2, P6), making students feel happy and positive (P2, P3, P4), good (P5), making sense and forming ideas (P4, P5). The quotations from students regarding the findings are as follows:

> *"The activities were good. They gave me ideas. They brought new things to our minds."* (P5)
> *"I think the social studies course is very good and fun. The activities were very nice, thank you. There were pleasant texts."* (P6)
> *Social Studies Teaching Process Taught Through Stories*

The students were asked their opinions about the contributions of the social studies course teaching process supported by stories after the experimental procedure. All of the participant students stated that they liked the use of stories in their social studies course. According to the views of the students, the contributions of this teaching process were gathered in the categories of critical thinking, empathetic thinking, language skills, and content.

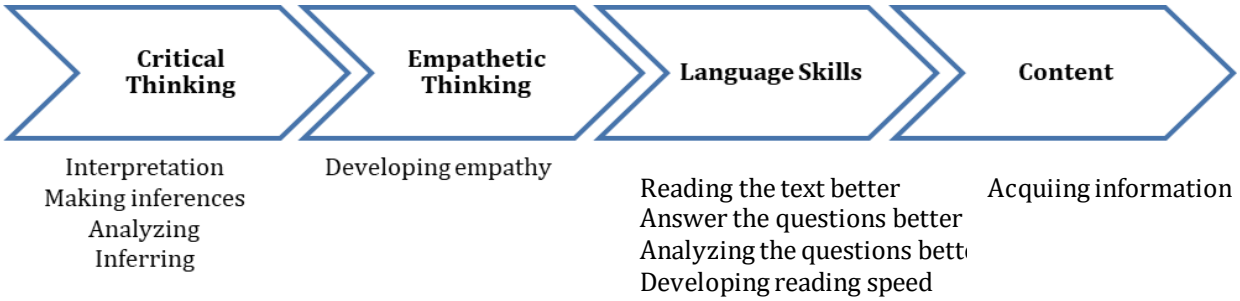

Figure 4. The effect of the stories on student development

Analysis shows that the stories *increased the empathetic thinking skills* (P4); *enabled making interpretations of the events* (P5) and *making inferences* (P6) *made the texts more readable* (P1, P4, P6); *enabled carrying out analysis* (P1); *enabled answering the questions better* (P1); *enabled giving better answers to questions* (P1); *provided information* (P4, P5); *allowed students to take a lesson from the result* (P3); *improved the speed reading* (P4, P5); *allowed students to become effective listeners* (P1). The following are quotations of the students and the research diary regarding the findings:

> *"It improved our reading skills. We began to understand better what we read. For example, it developed someone who reads slowly and made him/her read faster. It helped us read the questions in the exams faster and give more accurate answers."* (P3)
> *"As a researcher, I was glad to see that the students were positive about the applications and attended the course in the following weeks. It also strengthened my faith in our work. After reading the story Story, I saw that immigration often led students to empathize. I realized that the students were trying to understand the thoughts and feelings of the person in the Story, thinking that these situations could have happened to me. I must say that the students are affected by these activities, and social sensitivity about migration was apparent in the classroom. After the application, I wanted to get the students' ideas about the study and ask what they thought about it. The students expressed their ideas comfortably." (Research Diary, Week 8)*

Discussion

People, places, social events, and cultural elements created by people form the real-world context and authentic experiences of social studies courses. Social studies are not culturally agnostic; they are influenced by cultural contexts (Jones, Pang, & Rodriguez, 2001). Literature is a valuable resource to convey cultural elements, and using literary products in the social studies course brings the curriculum to life. Such literary products include folk songs, lullabies, poems, legends, and tales. Literary products such as novels, mythology, biography, and drama can also enrich citizenship education in the social studies courses (McGowan & Guzetti, 1991). One of the literary products used in social studies courses is stories (Öztürk & Otluoğlu, 2003). Literature is a valuable resource for carrying cultural elements, and the use of literature in a social studies course puts the curriculum into practice. The use of stories, which is a literary genre, brings joy to learning social information (Tindall, 1996). Stories support students in seeing and interpreting the learning process (Picken, 2012); it also allows students to relate the values that make up the character of an effective citizen (Sanchez, 2005). An effective citizen is expected to gain the skills of questioning, critical thinking, understanding others, etc. This study aims to examine the effect of a social studies course supported by stories on critical and empathetic thinking skills.

Shuyi (2017) states that stories improve citizenship qualities and skills, provide value and empathy, support cultural understanding and help to acquire thinking skills such as assessing the reliability of sources. Demircioğlu (2008) states that children can gain important skills such as historical imagination, using evidence, establishing cause-effect relationships, and understanding different perspectives thanks to stories. He also states that students learn to be tolerant of others, communicate more easily, and understand other people's feelings by analyzing stories emotionally. The quantitative data from this study show that there is a significant difference in critical thinking

and empathetic thinking skills in the experimental group that attended social studies classes supported by stories, and that the effect size is high. In this context, it is possible to say that stories in social studies courses are a powerful resource for developing critical and empathy skills.

The use of stories for educational purposes is very critical for offering both Education and entertainment. They also facilitate students' learning in-depth and critical thinking. Children who develop the habit of reading and reading well-written stories at a young age develop high-level thinking skills and become more aware of themselves and their surroundings (Calp & Calp, 2019). According to Sever (2008), the story characters' emotions, thoughts, and actions and their solutions to the problems help readers create role models for them. Thanks to stories, the readers meet characters with different personalities and worlds and strive to recognize and understand these characters. Thus, they empathize with the characters by putting themselves in the character's shoes and predicting their acts. The child recognizes different human characteristics and perspectives through the story heroes and respects differences. The use of stories in social studies Education helps children grasp the multicultural structure of the world and realize the fact that all people have various needs and wishes, and, unfortunately experience famine, flood, or earthquake, which makes them realize that they may also confront such problems (Savage & Savage, 1993).

Social studies courses are intertwined with life, enabling students to understand what has happened or what happened in real life. Students gain various attitudes toward social studies courses due to their personal characteristics and environmental factors. According to Akengin and Demirsoy's (2011) research on the perceptions of 4th-grades in a Turkish primary school, students found the social studies curriculum engaging, the course's learning processes enjoyable, and the curriculum's connections to daily life meaningful. Students in this study reported that they enjoyed their social studies class, that it made them feel good emotionally, that it had real-world applications, and that it helped them relax before the experiment.. During the study's experimental process, the social studies course was supplemented with stories from various literary genres. Examining the relevant literature suggests that the use of literary genres in social studies courses is beneficial in terms of critical thinking, developing empathy, encouraging effective use of language, gaining multiple perspectives, developing positive attitudes, etc (Edgington, 1998; Gilding, 1997; Kaymakçı, 2013; Tindall, 1996). As Karagözoğlu (2018) states, using literary texts in learning environments improves students' understanding, interpretation, different perspectives, and empathy skills. Also, Ersoy and Papatğa (2015) say that stories' literary genre supportchildren's language development, contributes to their socialization, and makes the subject enjoyable and attractive. Alkaaf (2017) states that students develop confidence in learning through stories, and it helps students develop positive attitudes to expressing, writing, listening, and action skills. Based on what the students in the experimental group thought, this study also found that adding stories to social studies lessons helped students develop cognitive and emotional skills, language skills, and content like empathy, interpretation, deduction, rapid and meaningful reading, analysis, knowledge acquisition, reasoning, effective responding, and listening.
Similarly, Güney's (2003) case study on story-based learning in social studies courses showed that stories contribute to attitude development and knowledge acquisition and the perception of the learning environment as fun and relaxing. Sanchez (2005) states that stories encourage students to analyze problems and choices and to realize how other people make the right choices in the face of dilemmas. In this context, it can be said that the students can draw conclusions about the causes and results of the events mentioned in the stories and recognise different perspectives. It also shows that they are able to put themselves in the person of the event and interpret their feelings.

Conclusion

This study shows that the use of stories in a social studies course promotes the development of critical and empathetic thinking skills, and that the effect size is substantial. According to the students, it is possible to develop cognitive and affective characteristics, language skills, and content by incorporating stories into social studies courses. These characteristics include empathy, interpretation, deduction, fast and meaningful reading, analyzing, knowledge acquisition, inference, effective responding, and listening.
This study contains various shortcomings that are inherent to it. The only measurement methods that were used for the research were the interviews with the students who were a part of the experimental group, and the data that was acquired from those interviews. In this regard, further research will produce more robust findings by taking these constraints into consideration.

Recommendations

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

- Workshops or in-service training can be organized for teachers and teacher candidates to help them prepare stories for educational purposes.
- Therefore, the short-term and long-term effects of the courses supported with stories and similar materials can be investigated.
- Only stories were used in this study. Other literary genres, such as poetry, fairy tales, and legends, can also be used in future studies.
- The use of stories in social studies courses to improve students' critical and empathic thinking skills was investigated in this study. Future studies can address the effect of stories on students' other high-level thinking skills.
- The examinations concerning the sub-skills of critical thinking, such as "understanding the problem, distinguishing subjective and objective judgments, analyzing inferences, asking questions appropriate for the purpose, evaluating inferences, determining the reliability of a source" are done in this study. Different studies may focus on the development of other sub-skills of critical thinking.
- The study was carried out in a public school with students from a low socio-economic background. Similar or comparison studies can be conducted at schools with different socio-economic levels.

Author (s) Contribution Rate

The authors equally contributed for the article.

Conflicts of Interest

There is no conflict of interest between researchers.

Ethical Approval

Ethical permission (31.12.2020, numbered E - 804.01-2012310005) was obtained from Hasan Kalyoncu University Social and Human Sciences Ethics Committee for this research.

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The Relationship between School Moral Atmosphere and Student Engagement in Secondary Schools

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The Relationship between School Moral Atmosphere and Student Engagement in Secondary Schools*

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Abstract
The main aim of the study is to examine the relationship between the secondary school students' perceptions of the school's moral atmosphere and their engagement with school. The School Engagement Scale and School Moral Atmosphere Scale were applied to 872 students attending the secondary schools in the 2016-2017 academic year. The study revealed that the school engagement levels showed a significant difference in favor of female students in terms of gender. Based on the multiple regression analysis, it was determined that school moral atmosphere is a significant predictor of school engagement. The results of this study suggest that school moral atmosphere is one of the key determinants of students' engagement with school, and hence it can be useful to improve school moral atmosphere to increase students' affective, cognitive, and behavioral engagement.

Keywords: Student engagement with school, School moral atmosphere, Secondary school

Introduction

Many studies in the field of education have addressed student engagement with school, which is defined as "a psychological investment made by students in order to learn in the school." Previous studies revealed that student engagement level is associated with many academic and social variables such as academic success, motivation, self-esteem, intra-school relationships, substance addiction, and undesired behaviors etc. (Newmann, 1992; Savi, 2011; Cemalcılar, 2010; Birch and Ladd, 1997). The studies on student engagement have focused heavily on the consequences of student engagement and tried to identify the impacts on various individual and group-level variables. On the other side, there are a limited number of studies on the antecedents of student engagement levels. More research is needed, particularly to identify the relationships between student engagement and school contextual characteristics such as school culture and atmosphere, as well as intra-school relationships.

Previous research reveals that school engagement is a three-dimensional construct: emotional, behavioral, and cognitive (Fredericks et al., 2004). The emotional dimension refers to the presence of positive emotions, the absence of negative emotions, and the attractiveness of the school for the students during their participation in school activities. The behavioral dimension refers to factors such as attention, effort, and persistence related to school expectations, learning-related tasks, and participation in different school activities. The cognitive dimension, on the other hand, is related to the strategies used by the student in learning activities, a certain study style, and self-regulated learning (Skinner et al., 2009; Wang et al., 2011; Lombardi et al., 2019). Therefore, school engagement is closely related to factors related to the school context. In previous studies, the importance of school climate as a predictor of students' school engagement was emphasized. Studies found that various dimensions of school climate are related to cognitive and emotional engagement (Gauley, 2017; Fatou & Kubiszewski, 2018). On the other hand, there are few studies examining how the moral atmosphere, which is an important variable in forming relationships in a school, is associated with students' school engagement. In particular, it is considered that studies examining the relationship between school moral atmosphere and different dimensions of school engagement (emotional, behavioral, and cognitive) will contribute to the literature.

The studies on school moral atmosphere are based on the concepts of "school as a community" or "schools as a sense of community." Particularly, the conception of "just community" suggested by Kohlberg affected the studies on school moral atmosphere. School moral atmosphere is related to the values, beliefs, and norm systems forming the relationships in a school and with students' degree of sharing these values and norms (Brugman et al., 2003;

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Kadivar et al., 2016). Members of a school with a positive moral atmosphere have a common sense of purpose, and they contribute actively to this goal and feel engaged. Therefore, school moral atmosphere has a critical role in defining how students view each other and school and how they establish relationships and behave in school (Karabanova and Sadovnikova, 2014). Students in a positive moral atmosphere may have higher levels of positive feelings toward school and thus higher engagement with school. However, quantitative studies are necessary to define the relationship between students' perceptions of the school's moral atmosphere and their engagement with the school. From this point of view, the aim of this study is to examine the relationship between students' perceptions of the school moral atmosphere and the levels of their engagement with school.

Student Engagement with School

Student engagement with school is defined as a psychological investment made by students in order to learn. As a result, a student with a high level of engagement is both academically successful and internalizes and applies what he or she learns by attempting to acquire more than what his or her school provides. A student with a high level of engagement with school has self-motivation to learn, and he or she is motivated for not only gaining good grades and the teacher's appreciation but also for comprehension and competence (Newmann, 1992). Student engagement can be defined as having positive feelings about education and a sense of belonging to school, as well as developing positive relationships with other students (Arastaman, 2006).

Fredricks, Blumenfeld, and Paris (2004) examined student engagement in three aspects, including behavioral, affective, and cognitive engagement. Affective engagement involves a student's positive reactions to school, teachers, and friends. A student who has positive feelings and enthusiasm about school activities and attends with great interest has a high level of affective engagement. A student's behavioral engagement is defined as his or her observance of school and classroom rules, as well as participation in learning and academic activities. A student with high behavioral engagement is active in both academic and social participation. Cognitive engagement is defined as a student's willingness to learn complex and challenging subjects and to pay effort and attention to learning them. A student with high cognitive engagement focuses on being specialized and successful in challenging fields. Ladd and Dinella (2009) discovered that students with high behavioral and affective engagement outperformed others in terms of academic progress.

Research on the antecedents and consequences of student engagement shows that factors related to the school context are associated with engagement. It also reveals that school engagement affects the academic and social development of students. For instance, Appleton et al. (2006) developed a taxonomy addressing the antecedents and outputs of student engagement. This taxonomy suggests that classmates who share common educational ideas and school values, make a similar academic effort, and have a similar desire to learn may lead to greater student engagement. A school atmosphere with positive teacher-student relationships and clear expectations of teachers and administrators, as well as the quality of educational activities, may also have a positive impact on student involvement. A student with a high level of engagement with school may be expected to have high academic success (graduation average, completed studies, etc.) and advanced social communication skills with adults and peers, to be aware of their own feelings, and to be capable of settling conflicts in case of disagreement.

The studies on school engagement suggest that the students with a high level of engagement with school make a greater psychological investment in learning; and they internalize what they learn (Newmann, 1992) and have higher academic success and motivation; it is less likely for them to have school problems such as guiltiness, truancy, and substance use (Savi, 2011); they have higher autonomy and show positive social behaviors more frequently (Cemalcılar, 2010). In addition, it has been determined that students' levels of commitment are associated with their self-esteem and positive relationships at school (Birch and Ladd, 1997).

Moral Atmosphere

Moral atmosphere was first addressed by Kohlberg and defined as the connection between moral reasoning skills and behaviors (Power and Kohlberg, 1994; Koops et al., 2010). School morale acts as an implicit curriculum in school. What teachers tell students to do or not do and students' right-wrong and good-bad judgments in school create the school's moral atmosphere (De Vries and Zan, 1994). Kohlberg considered schools as democratic education centers and highlighted that they should be shaped as models of a just community. According to Kohlberg, the ideal of "just community" is the most consistent approach with democratic communities' understanding of education (Çinemre, 2013). Therefore, Kohlberg developed the "Just Community Approach" in order to serve as a model of democratic management for improving school moral atmosphere and individual moral development (Edgington, 2000).

According to Foa, Brugman, and Mancini (2012), the school moral atmosphere consists of two basic dimensions: school and classroom. The school dimension is related to the sense of belonging attributed to the school by the students and the level of perception of the school as a community. The class dimension is related to the extent to which the helping norm is shared by classmates and teachers, the perception of classmates' and teachers' focus of responsibility in the implementation of the helping norm, identification with the class, and whether the norms are seen as a value by most of their classmates.

Relationship between School Moral Atmosphere and Student Engagement with School

Moral atmosphere has two effects on education: first, it acts as an implicit curriculum through which moral values and norms, a sign of moral values, can be transferred indirectly to students for moral education. Secondly, it provides social contexts where students interact with their classroom peers and teachers and can affect each other (Garrod, 1992). According to Foa, Brugman, and Mancini (2012), students' positive perceptions of school in terms of its moral atmosphere increase their sense of belonging to school, enable them to identify themselves with school willingly, establish positive social relationships in school, and hence prevent them from quitting school. This situation is also accompanied by an internalization of a sense of responsibility towards school. At the level of the classroom, the norms that students share with each other and their teachers and the content of these norms, whether a sense of responsibility is internalized or not, as well as students' level of identification with the classroom, become important. Students perceive the school's moral atmosphere positively and at a high level when shared norms are abundant and students internalize their responsibilities based on their own desire rather than outside pressure. In addition, students' sense of belonging to the classroom enables them to identify themselves with the class and hence affects their perception of the moral atmosphere positively.

Reviewing the related literature, there are a great number of studies suggesting that school moral atmosphere is influential on students' behaviors, academic performance, career planning, academic and real-life attitudes, motivations, and social and personal approaches (Host et al. 1998; Brugman et al., 2003). Positive school moral atmospheres create contexts in which students believe they should act in accordance with their responsibilities and within a moral framework toward their teachers and peers. Moreover, it involves a high sense of unity, social behavioral norms, and a strong sense of community (Puka, 1994). Therefore, a sense of unity and a positive atmosphere in school may be expected to have a positive effect on cognitive, behavioral and affective engagement. However, more studies are needed to be conducted to define the relationship between school moral atmosphere and students' engagement with school.

Aim of Research

The main aim of the study is to examine the relationship between the secondary school students' perceptions of the school's moral atmosphere and their engagement with school. Based on this main purpose, answers to the following questions will be sought:

1. What do secondary school students think about the school moral atmosphere?
2. What is the level of secondary school students' engagement with school?
3. Is there a significant difference in terms of gender in secondary school students' perceptions of the school moral atmosphere?
4. Is there a significant difference in terms of gender in secondary school students' levels of engagement with school?
5. Is there a significant relationship between the secondary school students' perceptions of the school moral atmosphere and their engagement with school?
6. Are secondary school students' perceptions of the school moral atmosphere a significant predictor of their levels of engagement with school?

Method

Research Model

A correlational research model was adopted in this study. Balcı (2010) attempts to define the existence and degree of relationships between two or more variables (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, and Demirel, 2014). This study is a correlational research project because its main aim is to define the relationship between the secondary school students' perceptions of the school's moral atmosphere and their levels of engagement with school.

Population and Sample

The research population consists of the students attending the secondary schools in Elazığ during the 2016-2017 academic year. The random sampling method was used in the study. Within the scope of this study, the scale was

applied to 1,000 students who were picked up randomly from the secondary schools in Elazığ the number of scales included in the analysis is 872. The research sample consists of 395 male and 473 female students. 405 students are in the seventh grade, and 459 are in the eighth.

Data Collection and Analysis

The Student Engagement Scale, which was developed by Fredricks et al. (2003, 2005) and adapted to Turkish by Akın et al. (2013), and the School Moral Atmosphere Questionnaire, which was developed by Host et al. (1998) and translated and adapted to Turkish by the researcher, were used for data collection.

The Student Engagement Scale (SES) is a 5-likert type scale consisting of 15 items, and it has three aspects (affective, cognitive, and behavioral engagement). The internal consistency coefficient (Cronbach's Alpha) of the scale was calculated at 0.78. The internal consistency coefficients of the affective, cognitive, and behavioral engagement dimensions were calculated as 0.79, 0.75, and 74, respectively. A high score on the scale indicates that the student's engagement with school is high.

The School Moral Atmosphere Questionnaire (SMAQ) is a two-part scale intended to measure the school's moral atmosphere. The first part is a multiple-choice scale involving dilemmas related to school life. This scale that presents two school dilemmas, *"helping*" and "*theft,*" was created in order to measure students' moral reasoning and accordingly their perceptions of the school's moral atmosphere. The second section, "*Questions about You and Your School*," is a 5-likert type section with 33 items. This scale is composed of two aspects: "*school as a community*" (community) and "*value attached to school*" (valuation). The second part of the SMAQ, "*Questions on You and Your School,*" was used in the study. The internal consistency coefficient of the scale was calculated at 0.73 for the "*school as a community*" and "*value attached to school*" dimensions. A high score on the scale indicates that the student's perception of the school's morale is positive.

Previous studies have shown that family income and parent-child relationships are variables associated with school engagement (Perdue et al., 2009; Veiga et al., 2016). For this reason, family income and the number of siblings in the family were included in the study as control variables. Frequency, percentage, mean value, t-test, correlation analysis, and multiple regression analysis were used for the analysis of the scales used and the data collected in this study.

Findings

This part states the findings obtained in the study as well as the comments based on these findings. The mean values and standard deviation values that indicate the secondary school students' perceptions of the school's moral atmosphere and their levels of engagement in school are shown in Table 1.

Table 1. Students' perceptions of school moral atmosphere and engagement with school

Scales and Aspects	N	$\bar{x}$	SS
School Moral Atmosphere	872	3.47	0.54
Value Attached to School	872	3.44	0.57
School as Community	872	3.56	0.64
Student Engagement with School	872	3.62	0.72
Behavioural Engagement	872	4.02	0.80
Affective Engagement	872	3.70	0.94
Cognitive Engagement	872	3.22	1.00

When the values in Table 1 are reviewed, it is seen that students expressed their opinion at the level of "Agree" with respect to the overall school moral atmosphere scale ($\bar{x}$=3.47) as well as its aspects, including the *value attached to school* ($\bar{x}$=3.44) and *school as community* ($\bar{x}$=3.56). Based on these findings, it can be suggested that students have positive perceptions of their school's moral atmosphere. It is seen that students presented their opinions at the level of "usually" with respect to the overall student engagement scale ($\bar{x}$= 3.62) and its aspects, *behavioral engagement* ($\bar{x}$= 4.02) and *affective engagement* ($\bar{x}$= 3.70), and at the level of "occasionally" with respect to the aspect of *cognitive engagement* ($\bar{x}$=3.22). From this finding, it can be stated that students' engagement with school is mostly focused on behavioral aspects, and their cognitive engagement is at a lower level. In this context, students' levels of exhibiting such behaviors as observing school rules, avoiding detrimental behaviors, fulfilling classroom tasks, and participating in sporting and managerial activities when required are higher than their levels of internalizing what they learn in school and making psychological investments in

learning. The results of the comparison, by the variable of gender, of the students' perceptions of the school moral atmosphere and their levels of engagement with school are given in Table 2.

Table 2. Comparison of the students' perceptions of school moral atmosphere and engagement with school by the variable of gender

Variables	Levene's Test		Male N=395		Female N=473		t	p
	F	p	$\overline{X}$	SS	$\overline{X}$	SS		
School Moral Atmosphere	0.52	.81	3.36	0.54	3.56	0.52	-5.55*	.00
Value Attached to School	0.21	.64	3.32	0.57	3.54	0.55	-5.56*	.00
School as Community	0.04	.83	3.46	0.65	3.63	0.61	-3.86*	.00
Student Engagement with School	3.12	.78	3.48	0.65	3.74	0.61	-5.32*	.00
Behavioural Engagement	2.09	.14	3.83	0.72	4.17	0.84	-6.2*	.00
Affective Engagement	4.08	.04	3.56	1.05	3.81	0.82	-3.9	.00
Cognitive Engagement	9.95	.002	3.11	1.05	3.31	0.96	-2.9	.00

Mann Whitney U Test for the affective and cognitive engagement dimensions

Variable	MWU	p	Mean rank	
			Male	Female
Affective Engagement	77732.50*	.00	394.79	467.66
Cognitive Engagement	82717.00*	.00	407.41	457.12

According to the data in Table 2, there is a significant difference between male and female students' perceptions of the school's moral atmosphere. (t=-5.55; p<.05). Furthermore, there is a significant difference in the school moral atmosphere dimensions of "value attached school" and "school as community" between male and female students, favoring female students. Accordingly, it can be said that female students perceive the moral atmosphere of their schools more positively.

A significant difference was found between male and female students' school engagement scores and behavioral commitment dimension scores in favor of female students (t=-5.32, p<.05; t=-6.2, p<.05). Mann Whitney U test was conducted for the dimensions of *affective engagement* and *cognitive engagement*. According to MWU test results, there was a significant difference between the female and male students' affective engagement and cognitive engagement levels in favor of female students ($MWU_{affective}$ = 77732.50, Male = 394.79, Female = 467.66, p<.05; $MWU_{cognitive=}$ 82717.00, Male= 407.41, Female= 457.12). These findings may suggest that female students' levels of engagement with school are higher than those of male students. The correlation matrix indicating the relationship between the students' perceptions of the school's moral atmosphere and their levels of engagement with school is given in Table 3.

Table 3. Correlation matrix indicating the relationships between the variables in the research

	A	1	2	B	I	II	III	C	D
A. School Moral Atmosphere	1								
1. Value Attached to School	.96**	1							
2. School as Community	.82**	.63**	1						
B. Student Engagement with School	.57**	.52**	.52**	1					
I. Behavioural Engagement	.42**	.41**	.33**	.63**	1				
II. Affective Engagement	.59**	.55**	.54**	.85**	.40**	1			
III. Cognitive Engagement	.28**	.23**	.31**	.78**	.28**	.46**	1		
C. Family Income	-.037	-.016	-.072*	-.05	-.019	-.07*	-.02	1	
D. Number of Siblings	.020	.024	.005	-.04	-.024	-.008	-.08*	-.07*	1

*p<.05; N= 872; **p<.01; N= 872

According to the data in Table 3, there is a significant and positive relationship between students' perceptions of the moral atmosphere at school and their engagement with school (r = .57, p<.01). Besides, there is a significant and positive relationship between the students' engagement with school and the aspects of *value attached to school*

(r = .52, p<.01) and *school as a community* (r = .52, p<.01) of the school's moral atmosphere. In other words, the more the values students share at school and their sense of belonging to a community increase, the more their engagement with school will increase.

It was discovered that there is a significant and positive relationship between the students' perception of the school's moral atmosphere and their behavioral engagement (r = .42, p<.01), cognitive engagement (r = .28, p<.01) and affective engagement (r = .59, p< .01), all of which are aspects of student engagement with school. Accordingly, it is seen that there is a significant and positive relationship between the students' perception of the school moral atmosphere and their school attendance (behavioral aspect) and their interest and curiosity for challenging and complex subjects (cognitive aspect). Likewise, there is a significant and positive relationship between the students' perception of the school's moral atmosphere and their level of interest, engagement, curiosity, enthusiasm, and positive feelings (affective aspect).

One of the demographic variables, family income, was found to have a significant and negative relationship with school as community, one of the aspects of the school moral atmosphere questionnaire (r = -.072, p<.05). In addition, it is seen that there is a significant and negative relationship between family income and affective engagement (r = -.07, p<.05). Accordingly, the higher the student family's socio-economic level gets, the lower the level of student's perception of school as a community and his/her affective engagement with school becomes. The results of the regression analysis that was conducted in order to determine whether the students' perception of the moral atmosphere of the school they attend is a significant predictor of their cognitive engagement are given in Table 4.

Table 4. Level of prediction of the students' cognitive engagement by their perceptions of school moral atmosphere

Predictive Variables	R	R^2	R^2 Variance (ΔR^2)	F Variance p	B	Standard Error	β	t	p
Standard					3.472	.109		31.716	.000
Step 1	.085	.007	.005	.042					
Income					-2.075	.000	-.030	-.873	.383
Sibling					-.064	.027	-.080	-2.423	.016
Step 2	.328	.108	.104	.000					
Income					-6.052	.000	-.009	-.267	.789
Sibling					-.065	.025	-.084	-2.590	.010
Value attached to sch.					.116	.073	.066	1.585	.113
School as community					.427	.066	.271	6.463	.000

Table 4 shows that the variable of sibling at Step 1 of the analysis is a significant predictor of the points obtained from the cognitive engagement scale (ΔR^2 =.005; p<.05). When the regression coefficient (β= -.080, p<.05) is examined, it is clear that the number of the student's siblings predicts cognitive engagement points in a negative and significant way. On the other side, the student family's income level is not a significant predictor of cognitive engagement points.

The points that the students at Step 2 of the analysis get from the aspect of *school as community* are a significant predictor of cognitive engagement level (β= .271, p<.05). Nonetheless, it is evident that the points given to the aspect of *value attached to school* aren't a significant predictor of cognitive engagement level (β= .066, p>.05). When the effect of demographic variables is controlled, it can be said that around 10% of the students' cognitive engagement levels result from their perceptions of the school's moral atmosphere.

The results of the multiple regression analysis that was conducted in order to determine whether the students' perceptions of the school's moral atmosphere are a significant predictor of their affective engagement are given in Table 5.

Table 5. Level of prediction of the students' affective engagement by their perceptions of school moral atmosphere

Predictive Variables	R	R^2	R^2 Variance (ΔR^2)	F Variance p	B	Standard Error	β	t	p

Standard					3.859	.102		37.688	.000
Step 1	.076	.006	.004	.081					
Income					-4.966	.000	-.076	-2.234	.026
Sibling					-.010	.025	-.014	-.423	.672
Step 2	.606	.368	.365	.000					
Income					-3.128	.000	-.048	-1.756	.079
Sibling					-.016	.020	-.022	-.820	.413
Value attached to school					.580	.058	.354	10.038	.000
School as community					.459	.052	.311	8.816	.000

According to the data in Table 6, the variables of income and number of siblings at Step 1 of the analysis don't have a significant relationship with the points obtained from the affective engagement scale (ΔR^2 =.004, p>.05). It is seen that the points of *value attached to school* (β= .354, p<.05) and *school as community* (β= .311, p<.05) at Step 2 of the analysis are a significant predictor of affective engagement level. Based on this finding, it is concluded that around 36% of the students' affective engagement levels result from their positive perceptions of the school's moral atmosphere. In other words, it can be suggested that the perception of the school's moral atmosphere has an important impact on their affective engagement.

The results of multiple regression analysis, which was conducted in order to determine whether the students' perceptions of the school's moral atmosphere are a significant predictor of their behavioral engagement, are given in Table 6.

Table 6**.** Level of prediction of the students' behavioural engagement by their perceptions on school moral atmosphere

Predictive Variables	R	R^2	R^2 Variance (ΔR^2)	F Variance p	B	Standard Error	β	t	p
Standard					4.099	.087		46.871	.000
Step 1	.032	.001	.001	.640					
Income					-1.175	.000	-.021	-.619	.536
Sibling					-.016	.021	-.026	-.761	.447
Step 2	.422	.178	.175	.000					
Income					-3.780	.000	-.007	-.219	.827
Sibling					-.021	.019	-.033	-1.078	.281
Value attached to school					.456	.056	.326	8.126	.000
School as community					.163	.051	.130	3.234	.001

Considering the data in Table 7, the variables of income and number of siblings at Step 1 of the analysis don't have a significant relationship with the points obtained from the behavioral engagement scale (ΔR^2 =.001, p>.05). It is seen that the points of *value attached to school* (β= .326, p<.05) and *school as* (β= .130, p<.05) at Step 2 of the analysis are a significant predictor of behavioral engagement level. According to this finding, it can be concluded that around 17% of the students' behavioral engagement levels result from their perceptions of the school's moral atmosphere. In other words, the students' positive perceptions of the school's moral atmosphere improve their behavioral engagement with school.

Conclusion, Discussion, and Suggestions

It was concluded that student engagement with school is high in affective and behavioral engagement aspects but moderate in cognitive engagement aspects. Arastaman (2006) discovered that students only study to the extent necessary to save the situation and give up when difficulties arise, resulting in low levels of cognitive engagement. The findings of this study are consistent with the findings of previous studies that indicate student engagement levels (Kalaycı and Özdemir, 2013; Özdemir and Kalaycı, 2013). According to the findings of the study, students have positive perceptions on the moral atmosphere of the school they attend. Therefore, students perceive their schools as a community and feel themselves a member of this community and attach value to their schools. Brugman, Tavecchio and et al. (1995) discovered that most of the students having participated in their studies

attach value to school as an institution where they meet their academic needs. These results lead to the conclusion that students feel themselves as part of the school community and experience emotional attachment to the institution. On the other hand, their cognitive engagement to school is constrained by the academic challenges that students face during the teaching process.

One of the study's findings is that the perception of the moral climate in schools varies by gender. The study revealed that female students' perceptions of the school's moral atmosphere are more positive than those of male students. This finding shows parallelism with the results of Lee's study (2008), in which Lee discovered that students' perceptions of the school's moral atmosphere vary in favor of female students. While female students regard school as an important institution, male students place a moderate value on it. De Wolff and Brugman (2010) found out that female students perceive school as a community and themselves as members of that community at a higher level than do male students. Female students require more to be successful than male students (Çelikkaleli, Gökçakan and Çapri, 2005), and they perceive school as a place that improves and protects them, whereas male students perceive school as a place that puts pressure on them (Özdemir and Kalaycı, 2013; Bellici, 2015), may have resulted in a higher level of engagement with school and a positive perception of the school's moral atmosphere.

Based on the research findings, there is a significant and positive relationship between the total points of school moral atmosphere and cognitive, affective, and behavioral engagement points. Accordingly, the more the students' positive perceptions of the school's moral atmosphere increase, the more their cognitive, affective, and behavioral engagement levels increase. The common values, norms, and beliefs shared by students in school and the increasing degree of sharing these values and beliefs have a positive impact on their engagement with school. In other words, students' positive perception of the common moral values shared in school improves their engagement with school. The studies conducted found that a supportive and positive school atmosphere increases participation in school activities and a sense of belonging to school and decreases a sense of estrangement and alienation from school (Osterman, 2000; Anderman, 2003). oodenow (1992) proposed that students' lack of complete belonging to school as a social system may result in low levels of active attendance, academic success, and even dropping out. Positive school morale, which is accompanied by a sense of belonging and the feeling that school is a valuable institution, affects students' engagement with school to a large extent. There are studies that demonstrate the emergence of negative outcomes such as depression, jealousy, feeling lonely, drug and alcohol addiction, increased absenteeism, and violence tendencies when a student doesn't feel like he or she belongs at school (Anderman, 2002; Osterman, 2000). These results support the effect of a positive school moral atmosphere on behavioral and affective engagement.

A negative and significant relationship was discovered between the students' income level and their perception of school as a community and their affective engagement with school. n other words, students with higher income levels feel more connected to their school community than students with lower income levels. This situation can be interpreted as increasing the diversity of the places where they can be socialized based on their income level. Considering that the students in the low-income group can meet their need for socialization mostly in school, it will be possible for students to increase the number of environments where they can be socialized as their income level gets higher and higher. nlike the findings of this study, other studies in the literature have discovered that the rate of quitting school for students with high income is 50% lower than that of students with low income, and that students from low socioeconomic families have a two-fold higher chance of quitting school than others (Rumberger and Thomas, 2000; Sarı, 2013).

Considering the relationship between the students' perceptions of school moral atmosphere and their cognitive engagement levels, it is seen that a positive school moral atmosphere is an important predictor of students' cognitive engagement with school. The fact that students perceive school as a community and feel themselves belonging to the school community improves their cognitive engagement. A student who perceives himself or herself as part of school is more willing to volunteer to participate in challenging activities other than his or her own tasks in school compared to others. The study's findings are consistent with those of Özdemir and Kalaycı (2013), who discovered that when children perceive their school as a home or a place where they can grow and be protected, their engagement with school increases.

According to the findings of this study, a positive and significant relationship was found between the students' positive perception of the school's moral atmosphere and their affective and behavioral engagement. Considering the relationship between the students' perceptions of the school's moral atmosphere and their affective engagement levels, it was found that a positive perception of the school's moral atmosphere is an important predictor of the students' affective engagement with the school. A student who attaches value to school as an institution can be proud of school properties and achievements. This type of student feels a sense of belonging at

school and values the school as a community. Aypay and Eryılmaz (2011) found out that the students who have lost interest in school don't like school, they start seeing school as a boring place, they feel unhappy in school, and hence they spend time there in an inefficient and effective way over time. This situation may be caused by the fact that the student has a broken emotional bond with school and loses his or her sense of being a part of the school community. It can be predicted that a student with a positive perception of the school's moral atmosphere will follow school and classroom rules more and participate in social activities apart from classroom activities. It was revealed that positive perceptions of the school's moral atmosphere are a significant predictor of students' behavioral engagement with school. Students who perceive their schools as communities and place value on them are more engaged with school in terms of behavior. Gottfredson (2001) found out that when students perceive the school atmosphere as positive and feel they are respected, their engagement with school increases. Karababa, Oral, and Dilmaç (2018) determined that the students who feel themselves valuable and a part of a social group in school have a high level of engagement with school. Based on these results, it was concluded that students' sense of attachment to school and school as a community are important predictors of students' engagement with school. The positive perceptions of the students regarding the school's moral atmosphere bring about the positive reactions of the students to the school, their teachers, and their friends. It also increases the level of students' compliance with school and classroom rules and strengthens their academic and social participation.

The following suggestions can be made based on the results of the study:

- The policies determined in our education system are mainly focused on taking measures to improve academic success. The study results allow us to understand that educational policies should be focused on 'improving students' affective, cognitive, and behavioral engagement with school, taking into account that student engagement is one of the most important determinants of academic success.
- Students' positive perception of the school's moral atmosphere increases their engagement with the school. As a result, increasing extracurricular sports and aptitude classes or training courses, as well as providing study halls where students can satisfy their social needs aside from the learning environment, can improve students' engagement with school.
- Students want to be a part of school as a social community before valuing it as an official institution with rules. If school administrators, teachers, and other staff with whom students interact in school approach students based on such awareness in line with "human values and respect" and it may enable students to feel valuable in school.
- More attention can be focused on measurement-assessment techniques that will be able to take into account students' positive attitudes and feelings towards school and their effort paid to it apart from their observable participation in class.
- Schools can create a positive moral atmosphere by defining the common values adopted by all school members and endeavoring to strengthen them.

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Author (s) Contribution Rate

This paper was produced from the master's thesis prepared by the first author under the supervision of the second author. During the production period, the first author prepared the introduction and literature part while method and findings prepared by the second author. Both authors were contributed the discussion, conclusion and suggestions parts.

Conflicts of Interest

The authors have no conflicts of interest to declare.

Ethical Approval

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The Predictive Relationship between Pre-Service Teachers' Self-Efficacy Belief, Attitudes towards Teaching Profession and Teaching Motivation

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The Predictive Relationship between Pre-Service Teachers' Self-Efficacy Belief, Attitudes towards Teaching Profession and Teaching Motivation

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Abstract

The study aims to determine the predictive relationship between self-efficacy beliefs, attitudes toward the teaching profession, and teaching motivation among pre-service teachers. The study, in which 364 pre-service teachers participated, is designed as a correlational survey model. Teachers' Sense of Self-efficacy Scale, Attitude Scale of the Teaching Profession, and Motivation to Teach Scale are used as data collection tools. The independent variables in this study are willingness to choose the teaching profession and academic achievement. The dependent variables are teacher self-efficacy, attitudes toward the teaching profession, and teaching motivation. The result of the study suggests that as the general academic achievement average of pre-service teachers increase, their perceptions of teaching self-efficacy, teaching attitudes and teaching motivations also increase. The fact that pre-service teachers choose the teaching profession voluntarily affects their teaching self-efficacy perceptions, teaching attitudes and teaching motivations positively. There is a significant relationship between the pre-service teachers' teaching self-efficacy beliefs, teaching attitudes towards teaching, and teaching motivation levels. It can be concluded that intrinsic motivation toward teaching and teaching profession self-efficacy beliefs have a significant effect on attitudes toward teaching.

Keywords: Pre-service teachers' self-efficacy, Attitudes towards teaching, Teaching motivation, Academic success

Introduction

The main purpose of education is to raise virtuous, morally developed people. The main actors in this process are teachers. It is a vital issue for countries to train pre-service teachers who are equipped with content knowledge, general culture, and pedagogical content knowledge, highly motivated, and who have internalized the basic values and ideals of the society (Higher Education Council [HEC], 2018). Pre-service teachers are the teachers of the future, that is, the architects of the society. Teacher training studies have attracted attention as a subject area that has attracted the attention of researchers in the educational sciences discipline since the 2000s (Atalmış & Köse, 2018). Effective teachers are those who make their students active in the learning process, support the development of students in every aspect and provide feedback to them in this direction. These teachers design a well-functioning, respectful classroom that allows students to work effectively. Teachers make families a part of the learning process and establish a strong cooperation bond between school and family so that students can receive less obstacles and more support (Darling-Hammond & Baratz-Snowdon, 2005). The use of all these skills, and many others that we cannot list here, creates a difficult workday for teachers. In order to teach effectively, teachers are expected to develop themselves, be open to learning, love the teaching profession, and believe in themselves in this direction. It is known that affective domain characteristics such as self-efficacy, attitude and motivation have an important role in influencing teachers' teaching behaviors (Bandura, 1997; Korur, Rocio, & Noemi, 2016; Krathwohl et al., 1973; Senler & Sungur, 2010; Van Droogenbroeck, Spruyt, & Vanroelen, 2014). It is necessary to develop practices, lessons and activities in teacher training programs to increase self-efficacy, attitude, and motivation characteristics, which are important features for effective teaching. Lessons and activities in teacher training programs should be based on practical experiences that will positively affect teachers' affective characteristics, focusing on pedagogical content knowledge (Bümen, & Ozaydin, 2013; Clift & Brady, 2005). Some studies show that the current functioning of university-school cooperation in Turkey is insufficient and that pre-service teachers have expectations of increasing the number and duration of practice courses (Kula & Demirci Güler, 2021).

Pre-service teachers' self-efficacy beliefs, attitudes and motivations regarding the teaching profession are important indicators of the teachers they will become in the future. For this reason, it is thought that determining

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the characteristics of pre-service teachers, such as self-efficacy, attitude, and motivation in the pre-service period and investigating the variables and network of relations that interact with these characteristics, are considered very important for the field of the teacher.

Teachers' Self-efficacy

It is one of the important steps towards becoming a successful teacher that pre-service teachers feel competent in the teaching profession. In the Social Learning Theory, founded by Bandura (1977), self-efficacy is defined as a person's beliefs about one's abilities to organize and execute the actions necessary to perform any activity or task assigned. It is known that individuals with high self-efficacy beliefs do not give up in the face of difficulties and struggle with difficulties, in other words, they persevere to complete their actions (Bandura, 1997). In the context of teachers, self-efficacy can be defined as the belief that the teacher can achieve effective results for students even when students are not fully motivated (Tschannen– Moran & Woolfolk Hoy, 2001). Therefore, when a teacher's self-efficacy is high, it is observed that they have a higher enthusiasm for teaching (Allinder, 1994), can cope with difficulties in business life more easily (Skaalvik & Skaalvik, 2011), and have higher motivation (Baş, 2021).

Attitudes towards Teaching Profession

Attitudes are the emotional and mental tendencies of the individual towards all related objects and situations, which are formed as a result of life and experiences (Allport, 1967). Attitudes have a directive and dynamic effect on behavior. The fact that the attitude is affected by the experiences indicates that the attitude is formed as a result of a learning process (Tavşancıl, 2010). Our attitudes shape our behavior. Attitude towards the teaching profession can be defined as the individual's feelings and thoughts about teaching. In this context, pre-service teachers' attitudes towards the teaching profession are an important indicator of the teachers they will become in the future.

There are many studies in the literature to determine attitudes toward the teaching profession. When the findings of those studies are examined, it is possible to come across many different results that make it difficult to generalize. In the meta-analysis study conducted with 113 studies in Turkey, it is found that the attitudes of pre-service teachers towards the teaching profession differ depending on gender in favor of women; the attitudes towards the teaching profession did not differ in terms of grade level, presence of teachers in the family and faculty type (Atalmış & Köse, 2018). It is known that positive teaching attitudes are related to professional development (Kwakman, 2003), performance (Üstüner, 2006), and self-efficacy (Bakaç & Özen, 2017; Baş, 2021; Dadandı, Kalyon & Yazıcı, 2016; Demirel & Akkoyunlu, 2010; Demirtaş, Cömert & Özer, 2011; Yakar & Yelpaze, 2019; Girgin, Akamca, Ellez ve Oğuz, 2010), teaching motivation (Ayık & Ataş, 2014; Gök & Atalay Kabasakal, 2019), teaching beliefs (Baş, 2021), lifelong learning tendency (Çam & Üstün, 2016; Ünal & Akay, 2017), teaching-learning competencies (Şahan, & Zöğ, 2017), and satisfaction (Recepoğlu, 2013).

Teaching Motivation

Motivation, which is another dependent variable of this study, is an important factor that initiates and maintains human behavior (Ryan & Deci, 2000). In self-determination theory, which deals with motivation in two dimensions as, autonomous and controlled motivation, intrinsic motivation is an example of autonomous motivation. Self-determination theory points out a qualitative difference and defines autonomous motivation as more adaptive than the controlled motivation (Deci & Ryan, 2000). Intrinsic motivation involves people doing an activity because they find it interesting and derive satisfaction from it. On the other hand, extrinsic motivation requires an instrumentality between the activity and some separable result, such as tangible or verbal rewards, so satisfaction does not come from the activity itself but rather from the external consequences of the activity (Gagne & Deci, 2005).

Motivation, which affects human behavior, undoubtedly plays an active role in teachers' teaching behavior. There is previous research showing that motivation affects job performance (Amri, & Ramdani, 2021; Leithwood, 2006; Maryani, Entang, & Tukiran, 2021; Müller, Alliata, & Benninghoff, 2009). Therefore, it is possible to say that teachers' teaching motivation will directly affect their professional performance (Fachmi, Mustafa & Ngandoh, 2021; Haryaka & Sjamsir, 2021) and their professional development efforts (Butler, 2007; Watt & Richardson, 2007). Teaching motivation affects teachers' behavior in the classroom and indirectly supports students' learning outcomes (Bernaus, Wilson, and Gardner, 2009). In addition, teachers' motivation directly affects student motivation (Kalyar, Ahmad, & Kalyar, 2018). To summarize, the teaching profession is a difficult profession that

serves to raise people and must be carried out with love, devotion, and self-sacrifice (Budak & Kula, 2017). It is known that affective characteristics of pre-service teachers such as self-efficacy, motivation, and attitude, will affect Phow they perform their Profession and their students. It is thought that revealing the variables that affect these affective characteristics and the relationships between them will make important contributions to the field of teacher training, development of pre-service education, and educational sciences literature.

This study explores the relationship between self-efficacy beliefs, attitudes toward the teaching profession, and teaching motivation among pre-service teachers. Research sub-problems are as follows:

1. Does pre-service teachers' general academic achievement average have a significant difference in their teaching self-efficacy beliefs, attitudes towards teaching Profession, and teaching motivation levels?
2. Does willingness to choose the teaching profession significantly differ pre-service teachers' teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels?
3. Is there a significant relationship between pre-service teachers' teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels?
4. Do pre-service teachers' self-efficacy beliefs about teaching and their level of teaching motivation significantly predict their teaching attitudes?

Method

Research Design

This study used a correlational survey model to investigate the relationships between pre-service teachers' teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels. The correlational survey model is a research model that investigates the existence and/or degree of co-variance between two or more variables (Karasar, 1995). The study also examines whether pre-service teachers' academic achievement averages and willingness to choose the teaching profession affect their teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels.

Participants

Three hundred sixty-seven pre-service teachers studying at the Faculty of Education of a State University in the Central Anatolia Region of Turkey participated in the research. To ensure the normality of the data during the data analysis phase, the data of three participants with extreme values were excluded from the analysis, and the number of participants was determined as 364. The demographic characteristics of the participants are given in Table 1.

Table 1. Pre-service teachers' demographic information

Gender	n	%
Female	256	70.3
Male	108	29.7
Age	n	%
17-20	214	58.8
21-25	136	37.3
26-30	10	2.7
31-35	2	0.6
36+	2	0.6
Age *M(SD)*	*20.68(2.4)*	
Academic achievement average	n	%
1.00-1.50	1	0.3
1.51-2.00	2	0.5
2.01-2.50	7	1.9
2.51-3.00	69	19
3.01-3.50	190	52.2
3.51-4.00	93	25.5
Department	n	%
Mathematics Education	110	30.2
Turkish Education	105	28.8
Preschool Education	66	18.1

Classroom Education	52	14.3
Science Education	17	4.7
Guidance and Psychological Counseling	14	3.8
Willingness to choose the teaching profession	n	%
Yes	315	86.5
No	49	13.5
Willingness to choose the teaching profession M(SD)	*1.13 (.34)*	
Total	364	100

The characteristics of the participating pre-service teachers given in Table 1 show that 70.3% (n=256) of the pre-service teachers are female, 29.7% (n=108) are male, with an average age of 20.68. The departments of 30.2% (n=110) of the pre-service teachers are Mathematics Education, 28.8% (n= 105) Turkish Education, 18.1% (n=66) Preschool Education, 14.3% (n=52) Classroom Education, 4.7% (n=17) Science Education and 3.8% (n=14) Guidance and Psychological Counseling. While 86.5% (n=315) of the pre-service teachers chose the teaching profession willingly, 13.5% (n=49) did not choose the teaching profession willingly.

Data Collection Tools

The research data were collected in personal information form and with three different instruments. These instruments will be introduced below

Personal Information Form: In the personal information form developed by the researcher, there are questions about pre-service teachers' gender, the department they study, grade level, age range, academic grade point averages and whether they choose the teaching profession willingly.

Teachers' Sense of Self-efficacy Scale: The scale developed by Tschannen-Moran and Woolfolk Hoy (2001) to determine teachers' self-efficacy beliefs was adapted into Turkish by Çapa, Çakıroğlu, and Sarıkaya (2005). In the adaptation study carried out with 628 pre-service teachers studying at six different universities in four big cities of Turkey, three sub-dimensional scale structures were determined: student engagement, instructional strategies and classroom management. Including 24 items, the scale consists of 9 intervals, graded with 5 points as "insufficient", "slightly sufficient", "sufficient", "quite sufficient" and "very sufficient". While the lowest score that can be obtained from the scale is 24, the highest score is 216.

The Cronbach's alpha reliability coefficient of the total scale in this study was .96. The Cronbach's alpha reliability coefficient of the "student engagement" sub-scale was .90, the "instructional strategies" sub-scale was .92 and the "classroom management" sub-scale was .90.

Attitude Scale of Teaching Profession: The Attitude Scale of the Teaching Profession was developed by Üstüner (2006). In the research, 449 pre-service teachers studying in 11 different education faculties were studied. The scale, which consists of 34 items and one dimension, is organized as a 5-point Likert scale: "I totally disagree", "I partially agree", "I agree moderately", "I mostly agree" and "I totally agree".24 of the 34 items that make up the scale express positive attitudes and 10 of them express negative attitudes. When items expressing negative attitudes are reverse coded, the minimum score that can be obtained from the scale is 34, while the maximum score is 170.To determine the reliability of the scale, a test-retest was performed with an interval of 4 weeks, and .72 was calculated. The Cronbach's alpha calculated for the internal consistency coefficient was found .93. The Cronbach's alpha reliability coefficient of the scale in this study was .94.

Motivation to Teach Scale: The Motivation to Teach Scale, developed by Kauffman, Yılmaz Soylu, and Duke (2011), and adapted into Turkish by Güzel Candan and Evin Gencel (2015), was used to determine pre-service teachers' teaching motivations. This scale consists of 12 items and two sub-dimensions as intrinsic and extrinsic teaching motivation. The scale was prepared in a 6-point Likert type as "strongly disagree", "disagree", "somewhat disagree", "somewhat agree", "agree" and "strongly agree". The lowest score that can be obtained from the entire scale is 12, and the highest score is 72.The reliability coefficient in this study was .84 for the factor of intrinsic motivation, whereas it was .79 for the factor of extrinsic motivation, and it was .69 for the total scale.

Data Collection and Analysis

Before the data collection process, pre-service teachers were informed about the purpose of the research. Data were collected in the spring term of 2021-2022. Data were analyzed using the Statistical Package for Social Sciences (SPSS, version 22), at a significance level of .05.

The data were first subjected to analysis of normality using the skewness-kurtosis coefficients, and 3 data outside the normal distribution were extracted. After that, the analyses were started after the conditions of normality were met. The Teachers' Sense of Self-efficacy Scale's skewness was observed -.782, kurtosis 1.090, and std. error .127; Attitude Scale of Teaching Profession's skewness -1.048, kurtosis .1.809 and std. error .127; Motivation to Teach Scale's skewness -.617, kurtosis .637 and std. error .127. When kurtosis and skewness values are between -2.0 and +2.0, the data is considered to be normally distributed (Georgeo and Mallery, 2016). For this reason, parametric tests were used in the analysis of the data. The mean and standard deviation of research variables were computed to obtain descriptive statistics. The pearson correlation test was used to investigate the relationship between variables. Multiple regression analysis was used to reveal the degree of correlations found between the variables in the model. While the study's independent variables were willingness to choose the teaching profession and academic success, dependent variables were teacher self-efficacy, attitudes towards the teaching profession, and teaching motivation. The data regarding the study's independent variables do not show a normal distribution. The data regarding academic success averages were determined as skewness -.855, kurtosis 2.037, willingness to choose the teaching profession skewness 2.141, and kurtosis 2,597. For this reason, non-parametric analyzes were used while analyzing the independent variables of the research. Mann-Whitney U test was used to compare two independent means, Kruskal-Wallis test was used to compare more than two means.

Results

Pre-Service Teachers' General Academic Achievement

The descriptive statistics of the Teachers' Sense of Self-efficacy Scale, Attitude Scale of the Teaching Profession, and Motivation to Teach Scale scores are given in Table.2.

Table 2. Descriptive statistics on the scales

Scales and Sub-dimensions	N	Min	Max	$\bar{x}$	SD
Teachers' Sense of Self-efficacy Scale	364	3.79	9.00	7.43	.94
Efficacy for Student Engagement	364	2.63	9.00	7.47	1.00
Efficacy for Instructional Strategies	364	2.13	9.00	7.45	1.04
Efficacy for Classroom Management	364	3.88	9.00	7.39	.99
Attitude Scale of Teaching Profession	364	1.18	5.00	4.13	.62
Motıvatıon to Teach Scale	364	1.00	6.00	4.16	.86
Motıvatıon to Teach Scale - intrinsic motivation	364	1.00	6.00	4.31	.94
Motıvatıon to Teach Scale - Extrinsic motivation	364	1.00	6.00	3.96	.96

The descriptive statistics given in Table 2 shows that Teachers' Sense of Self-efficacy Scale $\bar{x}$ = 7.43, student engagement sub-dimension $\bar{x}$ = 7.47, instructional strategies $\bar{x}$ = 7.45 and classroom management $\bar{x}$ = 7.39 for pre-service teachers. The Attitude Scale of Teaching Profession was calculated as $\bar{x}$ = 4.13 for pre-service teachers. Pre-service teachers' teaching motivations were $\bar{x}$ = 4.16, intrinsic motivation $\bar{x}$ = 4.31 and extrinsic motivation $\bar{x}$ = 3.96.

The level of teaching self-efficacy beliefs, attitudes towards the teaching profession, and teaching motivation of pre-service teachers were examined according to their general academic achievement average. The results are given in Table 3.

Table 3. Comparison of pre-service teachers' scores based on the scales by their general academic achievement average

Teachers' Sense of Self-efficacy Scale		N	Mean	df	Chi-Square X^2	p
General academic achievement average	1.00-1.50	1	232.00	5	17.655	.003
	1.51-2.00	2	195.00			
	2.01-2.50	7	84.86			
	2.51-3.00	69	148.83			
	3.01-3.50	190	185.34			
	3.51-4.00	93	204.34			
Efficacy for Student Engagement		N	Mean	df	Chi-Square X^2	p
General academic achievement average	1.00-1.50	1	166.50	5	21.990	.001
	1.51-2.00	2	226.75			
	2.01-2.50	7	69.36			
	2.51-3.00	69	143.78			
	3.01-3.50	190	188.84			
	3.51-4.00	93	202.11			
Efficacy for Instructional Strategies		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	264.00	5	15.996	.007
	1.51-2.00	2	156.50			
	2.01-2.50	7	101.29			
	2.51-3.00	69	150.11			
	3.01-3.50	190	184.05			
	3.51-4.00	93	205.26			
Efficacy for Classroom Management		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	254.50	5	13.016	.023
	1.51-2.00	2	200.50			
	2.01-2.50	7	92.21			
	2.51-3.00	69	158.58			
	3.01-3.50	190	181.86			
	3.51-4.00	93	203.29			
Attitude Scale of Teaching Profession		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	267.50	5	23.978	.000
	1.51-2.00	2	183.00			
	2.01-2.50	7	78.57			
	2.51-3.00	69	156.38			
	3.01-3.50	190	175.59			
	3.51-4.00	93	218.99			
Motivation to Teach Scale - intrinsic motivation		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	291.50	5	22.735	.000
	1.51-2.00	2	167.75			
	2.01-2.50	7	61.36			
	2.51-3.00	69	144.29			
	3.01-3.50	190	193.84			
	3.51-4.00	93	192.04			
Motivation to Teach Scale - Extrinsic motivation		N	Mean	df	Chi Square X^2	p
General academic achievement average	1.00-1.50	1	342.00	5	10.336	.066
	1.51-2.00	2	238.50			
	2.01-2.50	7	85.93			
	2.51-3.00	69	168.96			
	3.01-3.50	190	186.07			
	3.51-4.00	93	185.70			

Table 3 shows that pre-service teachers' perceptions of teaching self-efficacy differ significantly according to their academic achievement averages (x^2=17.655, p<.05).It is determined that pre-service teachers' self-efficacy perceptions regarding student participation show a significant difference according to their academic achievement averages (x^2=21.990, p<.05).Pre-service teachers efficacy for instructional strategies shows a significant difference according to their academic achievement averages (x^2=15.996, p<.05).Pre-service teachers' efficacy for classroom management shows a significant difference according to academic achievement averages

(x^2=13.016, p<.05).Pre-service teachers' attitudes towards the teaching profession show a significant difference according to their academic achievement averages (x^2=23.978, p<.05).Pre-service teachers' intrinsic motivation regarding teaching shows a significant difference according to their academic achievement averages (x^2=22.735, p<.05).Pre-service teachers' extrinsic motivations regarding teaching does not show a significant difference according to their academic achievement averages (x^2=10.336, p>.05). There are 3 participants whose results are not consistent with others; their academic achievement averages were the 3 lowest in the study varying between 1.00 and 2.00. As the academic achievement average of 361 pre-service teachers excluding these three participants increases, their perceptions of teaching self-efficacy, teaching attitudes, and teaching motivations increase.

Willingness to Choose the Teaching Profession

The level of teaching self-efficacy beliefs, attitudes towards the teaching profession and teaching motivation of pre-service teachers were examined according to their willingness to choose the teaching profession. The results are given in Table 4.

Table 4. Comparison of pre-service teachers' scores based on the scales by their willingness to choose the teaching profession.

Teachers' Sense of Self-efficacy Scale		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	190.01	5352.00	.001
	No	49	134.22		
Efficacy for Student Engagement		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	189.91	5383.00	.001
	No	49	134.86		
Efficacy for Instructional Strategies		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	188.91	5697.00	.003
	No	49	141.27		
Efficacy for Classroom Management		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	188.93	5691.00	.003
	No	49	141.14		
Attitude Scale of Teaching Profession		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	198.59	2648.00	.000
	No	49	79.05		
Motıvatıon to Teach Scale - intrinsic motivation		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	198.20	2772.00	.000
	No	49	81.57		
Motıvatıon to Teach Scale - Extrinsic motivation		N	Mean	U	p
Willingness to Choose the Teaching Profession	Yes	315	191.67	4829.50	.000
	No	49	123.56		

Table 4 shows that pre-service teachers' perceptions of teaching self-efficacy show a significant difference according to their willingness to choose the teaching profession (U=5352.00, p<.05). Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher perception of teaching self-efficacy than those who do not. Pre-service teachers' self-efficacy perceptions regarding student participation show a significant difference according to their willingness to choose the teaching profession (U=5383.00, p<.05). Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher self-efficacy perception regarding student participation than those who do not. Pre-service teachers' efficacy for instructional strategies shows a significant difference according to their willingness to choose the teaching profession (U=5697.00, p.05). Those who choose the teaching profession voluntarily have significantly higher efficacy for instructional strategies than those who do not. The efficacy of pre-service teachers for classroom management differs significantly according to their willingness to enter the teaching profession (U = 5691.00, p.05). Among the pre-service teachers, those who chose the teaching profession willingly have a significantly higher efficacy for classroom management than those who did not. Pre-service teachers' attitudes towards the teaching profession show a significant difference according to their willingness to choose the teaching profession (U=2648.00, p<.05).Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher attitude towards the teaching profession than those who do not. Pre-service teachers' intrinsic motivations regarding teaching show a significant difference in their willingness to choose the teaching profession (U= 2772.00, p<.05).Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher intrinsic motivation regarding teaching than those who do not. Pre-service teachers' extrinsic motivations for teaching show a significant difference according to their willingness to choose the teaching

profession (U= 4829.50, p<.05).Among the pre-service teachers, those who choose the teaching profession willingly have a significantly higher extrinsic motivation for teaching than those who do not.

Relationship between Pre-Service Teachers' Teaching Self-Efficacy Beliefs, Their Attitudes toward Teaching, and Their Teaching Motivation Levels

Pearson correlation coefficients among the pre-service teachers' teaching self-efficacy beliefs, their attitudes toward teaching, and their teaching motivation levels are presented in Table 5.

Table 5. The relationship between teaching self-efficacy beliefs, attitudes towards teaching, and teaching motivation levels of pre-service teachers

Variables	1	2	3	4	5	6	7
1. Teachers' Sense of Self-efficacy	1						
2. Efficacy for Student Engagement	.930**	1					
3. Efficacy for Instructional Strategies	.950**	.842**	1				
4. Efficacy for Classroom Management	.919**	.763**	.812**	1			
5. Attitude of Teaching Profession	.564**	.547**	.550**	.481**	1		
6. Intrinsic motivation	.460**	.484**	.448**	.355**	.604**	1	
7. Extrinsic motivation	.268**	.237**	.261**	.251**	.351**	.643**	1

**p<0.01, * p<0.05

In the interpretation of the Pearson correlation coefficient between the two variables, it can be said that there is a low level relation when the r value is between 0.00 and 0.30, a moderate level relation between 0.30-0.70, and a high level relation between 0.70-1.00 (Büyüköztürk, 2002). The results in Table 5shows that there was a positive moderate level relation between the pre-service teachers' sense of self-efficacy and attitude of teaching profession (r = .564, p< .01); a positive moderate level relation between the pre-service teachers' sense of self-efficacy and intrinsic motivation for teaching(r = .460, p< .01); a positive low level relation between the teachers' sense of self-efficacy and extrinsic motivation for teaching (r = .268, p< .01);a positive moderate level relation between the pre-service teachers' sense of self-efficacy for student engagement and attitude of teaching profession (r = .547, p< .01); a positive moderate level relation between the pre-service teachers' sense of self-efficacy for student engagement and intrinsic motivation for teaching (r = .484, p< .01); a positive low level relation between the pre-service teachers' sense of self-efficacy for student engagement and extrinsic motivation for teaching (r = .237, p< .01);a positive moderate level relation between the teachers' sense of self-efficacy for instructional strategies and attitude of teaching profession (r = .550, p< .01); a positive moderate level relation between the teachers' sense of self-efficacy for instructional strategies and intrinsic motivation for teaching (r = .448, p< .01); a positive low level relation between the teachers' sense of self-efficacy for instructional strategies and extrinsic motivation for teaching (r = .261, p< .01);a positive moderate level relation between the teachers' sense of self-efficacy for classroom management and attitude of teaching profession (r = .481, p< .01); a positive moderate level interaction between the teachers' sense of self-efficacy for classroom management and intrinsic motivation for teaching (r = .355, p< .01); a positive low level relation between the teachers' sense of self-efficacy for classroom management and extrinsic motivation for teaching (r = .251, p< .01); a positive moderate level relation between the attitude of teaching profession and intrinsic motivation for teaching (r = .604, p< .01); a positive moderate level relation between the attitude of teaching profession and extrinsic motivation for teaching (r = .351, p< .01).

Predictive Analysis

On the basis of these findings, a multiple regression analysis was conducted to determine the strength of the associations; the results are presented in Table 6.

Table 6. The results of multiple regression analysis

Variables	B	Standard error	β	t	p	Partial r	Durbin-Watson
Constant	1.14	.20	-	5.76	.000	-	2.19
Teachers' sense of self-efficacy	.24	.03	.36	8.35	.000	.403	
Intrinsic motivation	.31	.04	.47	8.58	.000	.412	
Extrinsic motivation	-.03	.03	-.05	-.93	.351	-.049	
R=.685 R^2=.469 F=106.184 p=.000							
Dependent variable: Attitude of teaching profession							

Table 6 shows that self-efficacy and motivation variables are significant predictor of teaching attitude (R=.685, R^2=.469; p<.01). Self-efficacy and motivation variables together explain 47.00% of the total variance in attitude. When the t-test results regarding the significance of the regression coefficients are analyzed, it is seen that self-efficacy and intrinsic motivation variables other than extrinsic motivation are significant predictors of attitude scores. The Durbin-Watson test value in the table shows no autocorrelation in the model since it takes a value of around 1.5-2.5. As a result of the analysis, it can be said that intrinsic motivation for teaching and teaching profession self-efficacy beliefs significantly affect teaching attitude.

Discussion

In the present study, as pre-service teachers' general academic achievement average increases, their perceptions of teaching self-efficacy, teaching attitudes and motivations increase. As pre-service teachers' general academic achievement average increases, their efficacy for student engagement, instructional strategies, and classroom management levels increase. In this context, it can be thought that students with high academic success in teacher training programs in Turkey may also have strong affective characteristics related to teaching. It should not be overlooked that pre-service teachers can have positive teaching perceptions by increasing their course success in the teacher training process.

Pre-service teachers' willingness to choose the teaching profession positively affects their teaching self-efficacy perceptions, teaching attitudes and teaching motivations. This result shows that pre-service teachers' willingness towards the teaching profession is important in determining their teaching self-efficacy perceptions, attitudes and motivations. There were also different research findings confirming that the pre-service teachers who willingly chose the department they studied and wanted to teach to have high self-efficacy, attitude, and motivation about teaching (Çapa & Çil, 2010; Gök, Atalay Kabasakal, 2019). In this direction, it can be determined as an important criterion whether individuals want to teach while choosing students for teacher training faculties.

There is a significant relationship between the pre-service teachers' teaching self-efficacy beliefs, teaching attitudes towards teaching, and teaching motivation levels. There are many research findings that confirm the relationship between teaching self-efficacy beliefs and attitudes toward teaching (Baş, 2021; Çakır, 2005; Çakır, Erkuş & Kılıç, 2004; Kanadlı, 2017; Poulou, 2007) and between attitudes toward teaching and motivation to teach (Ayık & Ataş, 2014; Baş, 2021; Chien et al., 2012).These mutually supportive findings clearly indicate that there are close and reciprocal relationships among teaching motivation, self-efficacy beliefs, and teaching attitudes. Intrinsic motivation for teaching and teaching profession self-efficacy beliefs have a significant effect on teaching attitude.Similar research findings revealing the effects of motivation and self-efficacy on teaching attitudes are also available in the literature (Chan, & Lay, 2021). This finding shows that when pre-service teachers believe they have effective teaching skills, they develop a positive attitude towards the teaching profession.Therefore, the importance of a teacher training program that focuses on improving pre-service teachers' teaching skills becomes evident. One of the pleasing research findings in Turkey is that the self-efficacy beliefs of pre-service teachers increase gradually during their undergraduate education (Bümen & Özaydın, 2013; Gökdağ Baltaoğlu, Sucuoğlu & Yurdabakan, 2015). These findings suggest that teacher training programs in Turkey positively affect pre-service teachers' self-efficacy beliefs.However, another research finding highlights that the positive attitudes of pre-service teachers towards the teaching profession tend to decrease during their undergraduate education (Tok, 2011). Pre-service teachers' professional self-efficacy is influenced by their undergraduate education, teaching practice experience, self-confidence, teaching staff pedagogical knowledge, job placement examinations, and the current social status of the teaching profession (Kanadlı, 2017).It is known that teachers' self-efficacy beliefs and emotional commitment to the teaching profession are strong predictors of the continuation of the Profession (Canrinus et al., 2012; Maslinsky, & Ivaniushina, 2016). To increase the teaching motivation and skills of pre-service teachers, practice-based education should be given importance in teacher training programs (Higgs, Barnett, Billett, Hutchings & Trede, 2013). Several studies have found that teaching beliefs and attitudes toward teaching significantly predict motivation to teach. Teaching self-efficacy has been found to play a mediating role in the interaction between teaching beliefs, attitudes toward teaching, and motivation to teach (Baş, 2021). It is known that teachers' autonomous motivation for teaching energizes students to support their basic psychological needs, increases an energizing effect on teachers' functioning, and reduces burnout (Van den Berghe, Soenens, Aelterman, Cardon, Tallir, & Haerens, 2014).

Conclusion

This study examined the relationships between pre-service teachers' self-efficacy beliefs, teaching profession attitudes and teaching motivations, which support pre-service teachers to be effective teachers, and some variables (academic success and willingness to choose to teach).The characteristics examined in the research are extremely important for effectively performing the teaching profession. Because teachers who do not have a positive belief and attitude towards teaching have difficulties in their Profession, have difficulties in overcoming the problems they encounter, and even tend to leave the Profession shortly after starting the Profession (Skaalvik & Skaalvik, 2011). Effective professional development programs can change teachers' characteristics such as self-efficacy, motivation and attitude. Because it is known that teachers' emotional-motivational attitudes can be changed with professional development (Brick, Cooper, Mason, Faeflen, Monmia, & Dubinsky, 2021). Teacher training programs should be aimed to transform pre-service teachers' perceptions of the teaching profession and themselves into a positive one by using interactive, collaborative, and authentic practices instead of traditional methods based on lectures (Clift & Brady, 2005; Liaw, 2009). For this reason, there is a need for experimental and qualitative research on the practices that can be done to increase pre-service teachers' and teachers' teaching self-efficacy beliefs, motivations, and teaching attitudes whose relations with each other are revealed. Different affective characteristics that these variables may be related to should be investigated, and suggestions should be made for the development of teacher training programs.

Recommendations

The present study was conducted with a limited number of pre-service teachers studying at a single-state university located in the Central Anatolian Region of Turkey. In this context, generalization has limitations. By collecting similar data with pre-service teachers from different regions and countries, the sample should be expanded and generalizable findings should be reached. Another limitation of the research is that it consists of only quantitative data. Making research designs supported by qualitative data with similar variables is recommended.

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The ethical committee approval of the study was obtained from the Social and Humanities SciencesResearch Ethics Committee at Kirsehir Ahi Evran University (Approval Number is 2022/1/11).

Conflicts of Interest

There are no conflicts of interest regarding the publication of this paper.

Ethical Approval

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Skills Teaching in the Social Studies Course in the Light of Graduate Theses

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Skill Teaching in the Social Studies Course in the Light of Graduate Theses

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Abstract

This study investigates the trends of postgraduate theses on skills teaching in Social Studies education between 2010-2020, identifies the problems encountered by researchers in the process of skills teaching, and presents the solutions provided to these problems. With this purpose, 74 master and doctoral theses on skills teaching in the Social Studies course were included in the research. Descriptive content analysis was used in data analysis. The results demonstrated that there are mainly attempts towards practical implementations in skills teaching, and the teaching processes are important in the Social Studies course. The investigation revealed that many studies were conducted on skills development, but the number of theses on social skills was limited. It was determined that some of these theses had insufficient explanation regarding the teaching-learning processes. However, the experiences of the researchers concerning the processes were not included in many of the theses. It was also observed that in some of the theses, there was no information about the assessment tools utilized, and some researchers were not critical of the results of the analyses. In addition, there was no scientific justification for the time allocated to the implementations in most of these theses. Researchers stated that they encountered problems due to insufficient implementation time in the skills development process. The suggestions made by the researchers at the end of the process include updating the curricula and course books, eliminating the school infrastructure deficiencies, and providing in-service training to teachers.

Keywords: Social studies course, Skill training, Descriptive content analysis, Master theses, Doctoral theses

Introduction

There have been significant changes from the past to the present in answering the question of what kind of individuals to raise. The eternal cycle of social transformations that occur in line with the changing environmental circumstances and the environmental consequences that these social transformations bring carry us to the future. Education systems play an essential role in adapting to these changes. In this respect, frameworks of competencies are established for the requirements of the current century, standards are determined, and evaluations are carried out through these standards. Today's curricula have a pioneering role in the engagement of the knowledge, skills, attitudes, and values needed in training individuals who are compatible with the transformations. Skills are an integral component of the frameworks of competencies. They are also equally important in the curricula of Social Studies. In the curriculum, there are 27 basic skills planned to be taught to students in the Social Studies course. These skills consist of researching, environmental literacy, perceiving change and continuity, digital literacy, critical thinking, empathy, economic literacy, entrepreneurship, observation, map literacy, legal literacy, communication, collaboration, recognizing stereotypes and prejudice, using evidence, making decisions, location analysis, media literacy, space perception, self-control, political literacy, problem-solving, social participation, drawing and interpreting tables, graphs and diagrams, using Turkish accurately and effectively, innovative thinking, and perception of time and chronology (Ministry of Education [MEB], 2018). Social Studies course has a substantial role in preparing the individual for society and realizing the social transformation that the century demands. It can be said that skills are an integral component of the process in the realization of this course and the stated objectives of our education system.

Skills

The concept of skills in the Social Studies curricula is defined as the individual becoming able to do a task by engaging in cognitive and behavioural efforts according to the level of readiness in appropriate learning environments (Yazıcı and Koca, 2015). Skill, in general, is the capacity to do something well and perform certain

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tasks competently, and it is gained through training and experience. Typically, skills consist of strategies and methods that are partially internalized and included in the performance routine. Skills may vary depending on the tasks they handle. Therefore, a broad skill may contain more activities than a narrow one (Smith, 2002).
In the past, the term skill was used to represent observable behaviors that required professionalism, and their focal point was improving behaviour. Today, skills have been stripped of behavioural definitions and treated as construction operations and processes in mind. In line with this trend, the focus has been changed to developing linguistic, cognitive, and social competencies through education processes (Boutin, 2004 cited. in Güneş, 2018b; Güneş, 2012). The influential factor in this change is production. While the skills required in agricultural and industrial societies are predominantly behavioural and physical, these skills have been replaced mainly by linguistic, cognitive, and social skills in the information society.
Skills are structures with self-forming sub-behaviours with no sharp distinctions among them, where the dimensions of knowledge and application are synthesized and require competence (Baysal, 2015). Even though skills differ in their scope and content, they share some common characteristics. Johnson (1997) lists these characteristics as follows (cited. in Karabağ and İnal, 2016):

- They are hierarchically organized.
- They are purposeful behaviour.
- They have components and contain sub-behaviours.
- They are integrated. They require multiple skills to be employed mutually.

Several classifications of skills have been made in the literature. One of these classifications is the division between general skills and field skills. General skills include thinking, research, problem-solving, and communication that can be transferred to different areas to perform various tasks and works. On the other hand, field skills are field-dependent skills that need to be learned in a certain discipline domain (Güneş, 2016). Other classifications of skills in the literature include the following (Parker, 2012):

- Democratic participation skills: Expressing opinions and listening; engaging in discussions about social problems; maintaining discussion; collaboration; accessing and using social resources.
- Work and interrogation skills: Using and making time schedules, maps, and graphs; distinguishing primary resources from secondary ones; formulating hypotheses; reading, analysing, reporting, and presenting information from different resources.
- Cognitive skills (problem-solving, critical thinking): Comparing; reaching a decision based on evidence; recognizing and characterizing problems; differentiating facts from views; interpreting cause and effect.

Since the study by Organization for Economic Co-operation and Development [OECD] (2005) to determine the key skills for 21st-century individuals creates an inclusive roof for skills and literacies, this structure may also be considered in classifying skills. OECD (2005) divides key skills into three categories. These are:

1. Using tools interactively:
   Rationale: Keeping up with technologies, adapting tools to own purposes, and meeting the need to conduct an active dialogue with the world
   a. Using language, symbols, and texts interactively (entails skills such as language skills, computation, and mathematical skills, map reading)
   b. Using knowledge and information interactively (involves critical thinking about the nature of information)
   c. Using technology interactively
2. Interacting in heterogeneous groups:
   Rationale: The necessity to deal with diversity in pluralistic societies, the importance of society, the importance of social capital
   a. Ability to relate well to others (includes empathy, management of emotions, interpreting dynamics underlying behaviours)
   b. Ability to cooperate (which means being able to share ideas, listen, debate, and make decisions that take into account different points of view.)
   c. Ability to manage and resolve conflicts
3. Acting Autonomously
   Rationale: The need to set goals and realise one's identity in the complex world, the need to exercise rights and take responsibility, the need to understand one's environment and its functioning
   a. Ability to look at events from a broad perspective and act within this big perspective (includes understanding relationships, understanding-analysing the structure and function of a system, and predicting direct and indirect consequences of events)
   b. Ability to form and conduct life plans and personal projects

c. Ability to defend personal and societal rights, interests, and needs

Apart from this classification, Partnership for 21st Century Skills (2015) guides in terms of the skills that 21st-century learners need to acquire. The study provides another type of categorization of the skills that students need to master. This categorization is as follows:

- Learning and Innovation Skills
  - Creativity and innovation
  - Critical thinking and problem-solving
  - Communication
  - Collaboration
- Information, Media, and Technology Skills
  - Information literacy
  - Media literacy
  - Information, communication, and technology skills
- Life and Career Skills
  - Flexibility and adaptability
  - Initiative and self-direction
  - Social and cross-cultural skills
  - Productivity and accountability
  - Leadership and responsibility

In another classification, the skills are divided into general and field (specific) skills. General skills are the ones that are transferable to different areas to perform certain tasks, such as researching, questioning, making decisions, thinking, communicating, and collaborating. In contrast, field skills need to be mastered within a specific discipline (Güneş, 2016; Schunk, 2009).

How the skills should be taught and evaluated is closely related to how these skills are classified. Hence, it is possible to say that before discussing how to teach or evaluate them, it is necessary to adopt a particular type of classification. At this point, it is concluded that it would be appropriate to address the skills as thinking, social, and instrumental skills in this study.

Thinking Skills

Cüceloğlu (1998) states that thinking is a series of active, purpose-oriented, organized mental processes to make sense of the situation one is in. Fisher (1995), on the other hand, defines thinking as critical and creative reflections in which developing ideas and reasoning are used together. He maintains that thinking includes all cognitive processes that help problem-solving, decision-making, analysis, and reasoning. In this framework, thinking skills can be defined as the ability to operate the aforementioned mental processes and use the relevant information for this purpose. Presseisen (1985) divides thinking skills into basic processes and complex processes. She expresses that the basic processes include actions such as building cause-effect relationships and evaluating, associating the known with the unknown, recognizing relationships, and classifying and noticing attributes. By contrast, complex processes include problem-solving, decision making, critical thinking, and creative thinking.

Berman (1991) suggests that when students' opinions are valued when their thinking affects their lives and those of others, and when it makes a difference, students will feel more confident in their thoughts and will be more skilled at thinking. In parallel to the principle above, he suggested some strategies to teach thinking skills. These strategies are:

- Creating a safe environment
- Monitoring and understanding children's thoughts
- Encouraging collaborative thinking
- Caring about questions rather than answers
- Focusing on connections and relationships
- Helping gain multiple perspectives
- Making the role of emotions in thinking recognised
- Helping students set standards and gain a positive outlook for the future
- Giving students opportunities to turn their thoughts to reality

These strategies will aid in creating environments that support the development of students' thinking skills. Beyer (2001) proposed direct teaching in teaching complex and challenging thinking skills and combining the teaching

of thinking skills with the teaching of subject matter knowledge. Furthermore, he mentioned the importance of featuring activities to support meaningful thinking in the classroom environment. These activities include scientific method steps such as research, problem-solving, evidence-based inquiry, and project creation.

Social Skills

It is peer acceptance in its simplest definition. Social skills are situation-specific behaviours that enable to receive or maintain the support of the environment, minimize the likelihood of punishment by society, and enable to exist in society (Gresham, 1988). Social skills are behaviours that enable individuals to build positive relationships with other individuals that constitute society. They ensure that the individual participates in society due to their compliance with social rules. They are situational and may vary depending on the setting. Besides observable behaviour, they have cognitive and affective dimensions (Stanley, 2010). They also include citizenship skills such as democratic participation, decision-making, and discussion (Parker, 2012). Goldstein et al. (1980) made a classification of social skills. In this taxonomy, social skills are classified into six groups (in Bacanlı, 2008):

- Beginning social skills: e.g., speaking, listening, introducing oneself
- Advanced social skills: e.g., participation, asking for help, giving instructions
- Skills for dealing with feelings: e.g., expressing and being aware of own feelings, empathy
- Skills alternative to aggression: e.g., negotiation, sharing, avoiding the fight
- Skills for dealing with stress: e.g., coping with shyness, responding to complaints, defending friends
- Planning skills: e.g., setting goals, decision making

By approaching social skills from a more general perspective, Gresham (1998) states that social skills are academic achievement (ability to gain a place in the classroom), collaborative behaviours, social initiation behaviours, enterprise, peer reinforcement, communication skills, problem-solving skills, and social self-sufficiency. Social skills can often be gained through performance-based, individual, or group training, conducted with behavioural approaches (Stanley, 2010). Gresham (1998) proposes a model in teaching social skills. This proposal consists of the dimensions of encouraging skills acquisition, improving skill performance, eliminating obstructive behaviours, and facilitating generalization. The dimension of encouraging skills acquisition employs being a model and instructions-explanations about coaching and skills. The model suggests that the most effective way of skills teaching is being a model. It is stated that behavioural rehearsal, behavioural consolidation, peer initiation, and collaborative learning strategies can improve skill performance. It is also pointed out that steps should be taken to dampen unwanted behaviours that have a negative effect on the acquisition and development of skills in the dimension of eliminating obstructive behaviours. In terms of facilitating generalization, it is stated that natural communities can be used to transfer acquired skills to different situations, exercises can be diversified, and functional intermediaries such as role-playing, animation, and routers can be used.

Instrumental Skills

To effectively interact with the environment, individuals must be able to use a variety of tools, such as information technologies, which are instruments of physical structure, and language use, which is an instrument of socio-cultural structure. The social and professional demands of the information society require mastery of physical tools such as computers and socio-cultural tools such as language, knowledge, and fund of knowledge. Instrumental skills are related to effective speaking and listening skills and computation and mathematics skills in multiple situations. Communication skills and literacies are also associated with this group (OECD, 2005). Based on these, we can define instrumental skills as those that mediate the realization of a roof competence (e.g., digital literacy for the effective use of digital tools in various fields), such as media literacy, digital literacy, map literacy, legal literacy, effective use of language, drawing and interpreting tables/graphs/diagrams.

Teaching of Skills

According to Piaget and Vygotsky, skill is the constructionon of knowledge acquired from physical and social interaction in mind based on prior knowledge (Quiesse, 2007 qtd in Güneş, 2012). Skills are developed by constructing in mind as a result of various activities. Skill cannot be simply transferred through education. The skill is developed through the active efforts of the individual. Skill requires the activation of various mental, emotional, and physical resources (Quiesse, 2007 cited. in Güneş, 2018a). Güneş (2012) suggests three stages to be followed in skill teaching. These stages are:

Skill preparation: This is the stage where information about the skill and the purpose of the skill is explained. It should be emphasized that these explanations are necessary for the execution of the work or application.

Applying knowledge and techniques: This is the stage where the knowledge and techniques related to the skill are shown to the student with examples. The students are given activities that will provide them with opportunity to apply this knowledge and techniques. During the process, the student is monitored and guided.

Adapting to different situations: At this stage, the student is working on adapting the skill to different situations. To achieve this, different activities are given in which the student can transfer the skill to other situations. The student is encouraged in the process. It should not be forgotten that individual differences will have an impact on learning speed.

The points to be considered in the skill-teaching process are as follows;

- Students' current knowledge and experience should be taken into consideration.
- Students should be encouraged in the process.
- There should be a wide range of activities so the student can use the skill differently. .
- Awareness about the skill should be created.

Issues such as the application stages of the skill, the difficulties experienced, and solution suggestions should be shared verbally during the process (Bissonette & Richard, 2001 cited. in Güneş, 2018b).

In teaching skills, students' developmental characteristics, readiness levels, psychological and sociological characteristics, interests, and needs should be taken into account. Students should be allowed to participate actively and experience the process first hand. Teaching experiences should be designed to start from the child's immediate environment and expand away. It should not be forgotten that for meaningful learning to take place, it is necessary to benefit from students' prior learning. New learning will be built on prior learning. Skills teaching activities should be designed in a sequence from easy to difficult. It should be considered that the violation of this principle may cause negative effects on behaviors such as self-confidence, motivation, and attitude (Sever, 2021).

Evaluation of Skills

Clearly identifying the structure intended to be assessed and meeting technical and psychometric standards constitute the first step in a qualified evaluation. It is important to determine what to assess and how to assess it. The structural characteristics of the skill to be measured will be effective in specifying the measurement tool. Therefore, whether the skill belongs to the cognitive, social, or psychomotor areas should be considered. Besides, attention should be paid to clearly identifying the indicators that represent the skill, and the evaluation instrument should be capable of measuring these indicators validly and reliably.

Another essential consideration in evaluating skills is whether to assess the practical knowledge or the performance regarding the skill. It should be first clarified whether the aim is to evaluate the individual's knowledge concerning the application of the skill, or whether it is to assess the performance related to displaying the skill. This distinction will directly impact the instrument that will be used in the assessment of the skill. If the skill to evaluate has a complex structure, and the assessment made will not cover all components of this structure, it should be decided which aspects of the structure are important to be captured (National Research Council [NRC], 2011). Selecting the components that best represent the skill and conducting the assessment on these components are critical for ensuring validity at this stage.

It is important to prepare test items of the type and nature that will reveal the skill to be measured in evaluating skills. If the aim is to assess the knowledge about the skill, it is necessary to utilize pen-and-paper tests with short questions and multiple-choice answer options. However, if the purpose is to measure more complex skills, such as solving complex, multipartite problems, a response mode that requires the test taker to create an answer will probably be more useful (NRC,2011). Furthermore, real or scenario-based, performance-oriented measuring tools that will disclose the skill may also be used in assessing skills with complex structures.

Some trend research studies in the literature examine research on Social Studies education. In their study examining graduate theses on Geography subjects in Social Studies education between the years 2006-2017, Öner and Öner (2017) determined that most of these theses were written at Gazi, Marmara, and Atatürk Universities, and the subjects predominantly investigated were concept teaching, teaching-learning processes, and method-technique topics. In Dilek et al. (2018) study, which examined Social Studies master's theses between the years 2010-2017, it was identified that subject-concept teaching topics are mainly studied in the theses. Duman and İnel (2019) studied the master's theses on Social Studies between 2008 and 2014 and found that theses mainly focused on teaching practices. Akaydin and Kaya (2015) examined research published in nationally indexed journals in the fields of Life Sciences and Social Studies between 2000-2013. They determined that teaching methods, value,

and skills training were mainly studied. In the study in which Güleç (2020) examined graduate theses on empathy between the years 2000-2019, descriptive data such as the distribution of theses by universities and the gender of the researchers were presented. In another study of the postgraduate thesis between 2008 and 2019 on literacy skills in the field of Social Studies education, Güleç and Hüdavendigar (2020) concluded that quantitative methods were mainly used in the theses and that the most studied sample was candidate teachers. Considering the existing literature, it is believed that a study of Social Studies graduate theses that examines skill instruction, techniques, processes, and content dimensions in depth will contribute to the existing literature. In this setting, no analysis of social studies teaching skills has been found in the literature.However, in the MEB (2018) Social Studies curriculum, competence areas and therefore, skills related to these areas are included. These competence areas are discussed under the headings of communication in the mother tongue, communication in foreign languages, mathematical competence and basic competences in science/technology, digital competence, learning to learn, social and civic competences, cultural awareness, and expression. As can be seen, it is envisaged that students will gain many skills within the scope of these competence areas. This research is considered important in the literature in terms of revealing the skills to be studied in social studies teaching, determining the gap in the literature, and shedding light on the studies that will be done. Because it is necessary to classify the educational research in the literature and evaluate and synthesize their trends and research results. Thus, it is possible to reveal the points where the studies on the same subject support or contradict each other, as well as to prevent similar studies and lead to studies that take different perspectives into account (Sözbilir and Çalık, 2014). Hence, this study aims to investigate the trends in graduate theses on skills teaching in Social Sciences education between 2010-2020, identify the problems encountered by researchers during skills teaching, and present the suggestions for solutions to these problems. With this aim, answers to the following research questions were sought:

1. What are the research methods used in the thesis?
2. What is the distribution of the theses according to the grade levels studied?
3. What are the skills discussed in the theses?
4. Which learning-teaching processes are employed in skill teaching in the theses?
5. What is the duration devoted to teaching skills in the theses?
6. How are assessments performed in skill teaching in the theses?
7. What problems are encountered in the process of skill teaching?
8. What suggestions have the researchers made for skills teaching?

Method

Research model

This study was carried out by adopting content analysis. Content analyzes are research syntheses that have an important role in disseminating researched knowledge and shaping future research, policies, practices, and public perception (Suri and Clarke, 2009 cited in Çalık and Sözbilir, 2014). According to Alk and Sözbilir (2014), content analysis can be broadly categorized into three types: meta-analysis, meta-synthesis (thematic content analysis), and descriptive content analysis. In this context, descriptive content analysis was used as this study aimed to determine the skills studied in theses in social studies teaching. Descriptive content analysis studies are systematic investigations that involve examining research studies on a specific subject, identifying common trends in the studies, and evaluating the results of research accordingly (Çalık and Sözbilir, 2014; Sözbilir, et al., 2012). In other words, the descriptive content analysis method is the in-depth examination and organization of qualitative and quantitative studies carried out independently on a particular subject or field. The purpose is to determine the general trends in the subject or field with the analyses made. In this way, it is considered that the results obtained will guide future studies on the subjects planned (Ültay et al., 2021). In this study, descriptive content analysis was utilized as the research model since the aim of analyzing the skills addressed in the Social Studies course at the graduate level is to determine the trends and to guide researchers, practitioners and decision makers. However, due to the large number of studies examined in descriptive studies, in-depth interpretation and synthesis are limited. This is the limitation of the research.

Data collection and analysis

This research included graduate theses based on skills teaching in the Social Studies course accessible at the Council of Higher Education National Thesis Centre. In this context, the keywords "Social Studies," "Social Studies Course," "Social Studies Teaching," "Social Studies Education," "Social Studies Curriculum," "Skill," "Literacy" were used in the search to access the data. These keywords were searched independently in the title, subject field and in the content. Thus, the data sources of the research were the theses obtained as a result of the document review. To this extent, a total of 74 master's and doctoral theses were analyzed. In the research, only

theses were preferred as data source. Theses are preferred in this research because of the scientifically controlled progression of theses from the beginning to the end of the process. There are also articles produced from theses in the literature. Therefore, considering the articles may result in two evaluations of the same study. However, taking the theses only due to the reasons mentioned above can be expressed as a limitation of the research. Within the scope of the introductory information of these theses analyzed, distributions were presented according to the years, thesis type and university. Accordingly, the dispersion of these theses by years is presented in Figure 1.

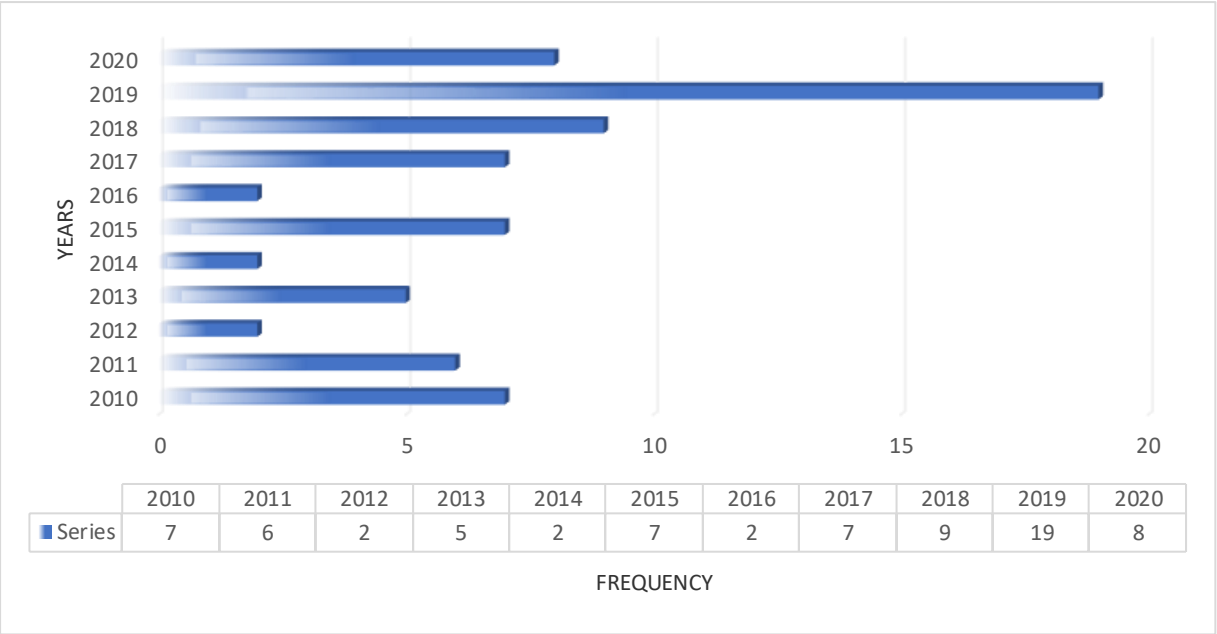

Figure 1. The Distribution of Theses by Year

As demonstrated in Figure 1, the number of theses completed between 2010 and 2020 varies between two to 19 per year. The highest number of theses in skill teaching in Social Studies teaching was written in 2019 (19). This was followed by the years 2018 (9) and 2020 (8). In 2012, 2014, and 2016 only two theses were done in each year.

The dispersion of the type of theses investigated in the research is presented in Figure 2.

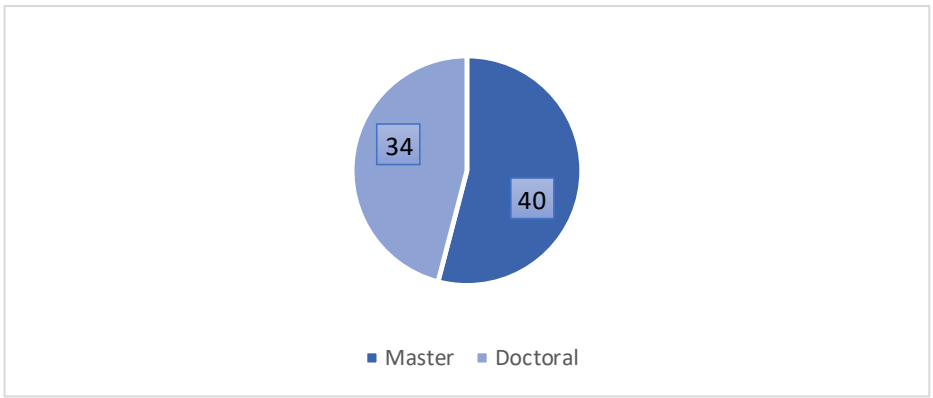

Figure 2. The distribution of the type of theses

As shown in Figure 2, a total of 40 master's theses in Social Studies course skills teaching were investigated. The number of thesis at the doctoral level was 34. The distribution of the theses according to the university in which they were completed is presented in Figure 3.

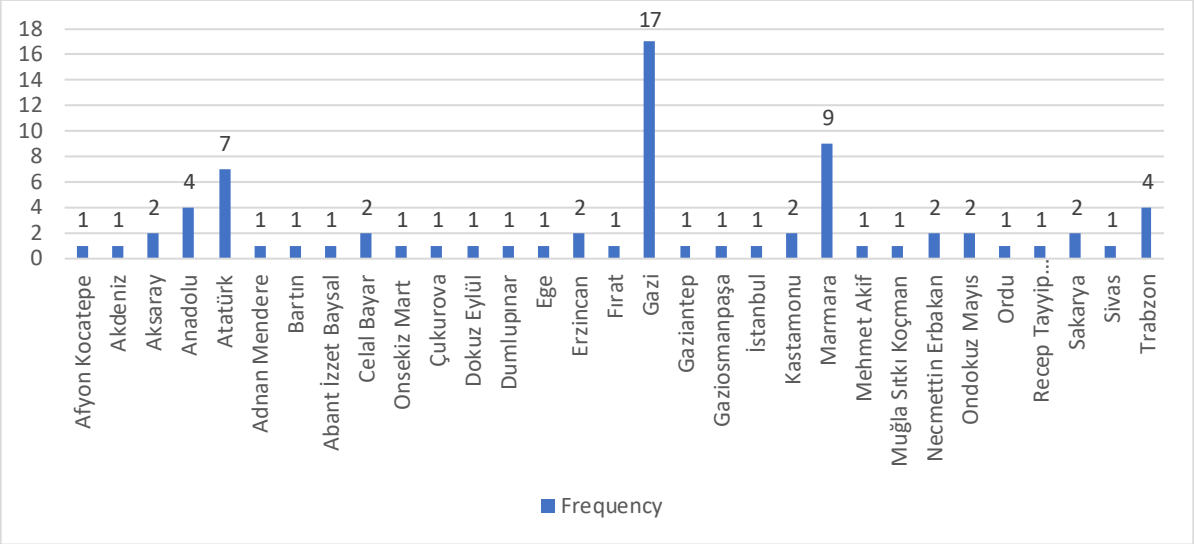

Figure 3. The distribution of the theses according to universities

As shown in Figure 3, the highest number of theses in skills teaching in the Social Studies course was published at Gazi University with 17 thesis. Marmara University followed this with nine theses, and Atatürk University was next with seven theses. In most other universities, one thesis was completed in this subject.

In addition to the introductory information on the thesis examined, the research method of the thesis, the grade level studied, the skill discussed, the learning-teaching process related to the teaching of the skill, the application time, the type of skill measurement, problems in skill acquisition and the suggestions made were discussed in the analysis of the data, which provide in-depth data about the thesis. MAXQDA analysis program was used to analyse the data. All thesis included in the research were investigated under these headings.

First of all, the researchers prepared a control form containing these titles. Then, the titles in this control form were entered into the MAXQDA analysis program as titles. The researchers examined all the thesis included in the research separately in the light of these titles. Later, the researchers came together and compared the results of the analysis. Conflicting situations were shown to another social studies expert. In the light of the discussions, the analysis was given its final form. Thus, the analyses were checked and the validity and reliability of the research was ensured. The data set was analysed by two researchers and finalized by making comparisons. Graphs and tables were used to present the findings arising within the scope of this analysis.

Findings

Findings on the Research Method

The findings of the research methods used in the thesis for gaining skills in the Social Studies course are given in Table 1.

Table 1 indicates that the thesis completed in skills teaching in the Social Studies course utilized quantitative, qualitative, and mixed methods. Among the quantitative methods, experimental models were employed dominantly, and in the qualitative methods, action research type (12) of studies were primarily conducted, whereas in the mixed methods, embedded experimental designs (8) were mainly preferred. Three thesis conducted through the mixed method did not mention the mixed models they selected. In general, when the research model is considered, it was revealed that the control group pretest-posttest model (34) was mainly preferred as a research method for skills gains in the Social Studies course. It can be said that care was taken in selecting the research method in graduate studies to comply with educational application processes. In conclusion, practical studies aimed at gaining skills in the Social Studies course were predominant.

Table 1. The research methods used in the thesis

Research Method	Model	Sub Model	f
Quantitative	Experimental Model	Pretest-posttest with the control group	34
		Solomon	1
		Single group pretest-posttest	1
		Unpaired control group	1
	Survey Model		1
Qualitative	Action Research		12
	Case study		1
Mixed	Embedded experimental design		8
	Explanatory sequential design		4
	Embedded mixed methods design		3
	Triangulation design		2
	Dominant/less dominant design		1
	Concurrent transformative design		1
	Convergent parallel design		1

Findings on the Grade Level Studied

The distribution of grade levels in the thesis on skill teaching in Social Studies course is demonstrated in Figure 4.

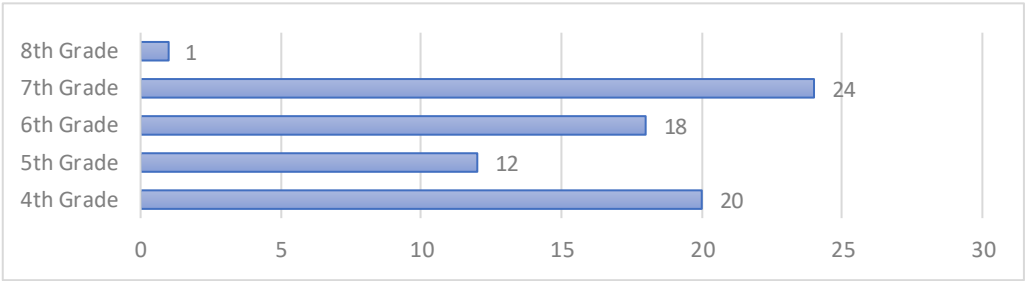

Figure 4. The distribution of theses by grade level

As indicated in Figure 4, it was determined that 24 thesis on skills teaching in Social Studies courses were studied at the seventh-grade level; that is, this class level was preferred the most. On the other hand, the least studied level among the thesesthesis was in the 8th grade with one thesis. This finding is because there are no Social Studies courses in the 8th grade. The survey model was adopted in that study, and the students' status of possessing the specified skill (map skills) was examined. It was also determined that although there was a Social Studies course, the under-preferred grade level as the working group was the fifth grade.

Findings on the Skill Studied

The skills addressed in Social Studies teaching are determined and classified. Correspondingly, the findings regarding the classification of the skills studied in the thesis are presented in Table 2.

As shown in Table 2, it has been determined that all types of skills in the literature are included in the studies carried out at the graduate level for Social Studies teaching. In other words, it has been revealed that thinking, social,, and instrumental skills are discussed in the thesis, and many skills under these headings are attempted to be developed. As Table 2 indicates, the most frequently studied skill within thinking skills is critical thinking. It preceded the other common two skills of creative thinking and problem-solving.

The skills and their frequencies within social skills are also presented in Table 2. In the scope of social skills, the skills of social participation, communication, social skill, empathy, and conflict resolution were handled. It was determined that empathy skills come to the fore in social skills covered within. Communication and social skills followed this skill. It is noteworthy that social participation, among the skills specific to the Social Studies course, is understudied even though it is a course-specific skill.

Table 2. Skills addressed in the theses

Skills Category	Skills Addressed	f
Thinking skills (40)	Critical thinking	13
	Creative thinking	7
	Problem-solving	5
	Decision making	4
	Historical thinking	3
	Scientific process skills	3
	Self-organization skills	2
	Higher-order thinking skills	1
	Spatial visualization skills	1
	Conceptual understanding	1
Social Skills (14)	Empathy	6
	Communication skills	3
	Social skill	3
	Social participation skill	1
	Conflict resolution	1
Instrumental Skills (30)	Map Reading skills	6
	Spatial perception skills	5
	The place of change and continuity perception	3
	Drawing, reading, and interpreting graphs skill	3
	Time and chronology perception skills	2
	Entrepreneurship skills	2
	Historical literacy	2
	Field literacy	1
	Geographic skills	1
	Economic literacy	1
	Identification of location and coordinates skills	1
	Planning and organizing skills	1
	Finding directions skill	1
	Creative writing skill	1

The instrumental skills and their frequencies are also presented in Table 2. As shown in the table, the most frequently studied instrumental skill is map skills, followed by spatial perception skills. When the instrumental skills studied in social studies were examined in general, it was revealed that the skills for the geography discipline were dominant. However, it was determined that studies investigating literacies within instrumental skills were few. It is thought that this is because literacy skills were brought to the foreground after the 2018 Social Studies curriculum was implemented.

The review of the skills in the context of Social Studies teaching demonstrated that thesis were made mostly in thinking skills. In contrast, the fewest number of thesis were written for social skills. A possible reason for this finding might be the difficulties in assessing these skills. Moreover, in one of the thesis examined, all fields of skills were investigated from the perspective of active citizenship. While in some thesis, the skills under focus were used as teaching methods in improving students' academic success and attitudes, in most of the thesis, the skills were tried to be developed through a different teaching method. In other words, in some thesis the skills addressed were dependent variables, whereas in others, they were treated as independent variables.

Findings on the Teaching-Learning Processes in Skills Teaching

The findings suggest that various applications were implemented during skills teaching in the Social Studies course. These implementations employed in the skills teaching process were discussed under the titles model, approach, method, and technique. The models utilized in the skills teaching process are outlined in Table 3.

Table 3. The models used in the skills teaching process

	Models	f
Skills Teaching Process	7E-supported Inquiry-Based Teaching	1
	Direct Instruction Model	1
	Quantum Learning Model	1
	Flipped Learning	1
	5E Learning Cycle Model	4

As pointed out in Table 3, the 5E learning cycle model, 7E-supported inquiry-based teaching, direct instruction model, quantum learning model, and flipped learning were practiced in some thesis during skills teaching in the Social Studies course. In these thesis, the effects of flipped learning on planning skills, the effects of quantum learning on self-organization skills, the effects of the direct instruction model on finding directions skills, the effects of 7E-supported inquiry-based teaching on critical thinking, and the effects of 5E learning cycle model on skills related to scientific processes were investigated. Of thes thesis, the study that utilized the direct instruction model was conducted with students with mental disabilities. The approaches used in skills teaching are presented in Table 4.

Table 4. The approaches used in the process of skills teaching

	Approaches	f
Skills Teaching Process	Active Learning	1
	Conflict Resolution Training	7
	Argumentation-Based Learning	4
	Contextual Learning Approach	1
	Successful Intelligence Theory	1
	Inclusive Education Program	11
	Geographic Skills Development Applications	1
	Economic Literacy Program	1
	Empathy-Based Activities	1
	Object-Based Activities	1
	Differentiated Teaching	1
	Entrepreneurship Program	1
	Map Scale Use Skills Activities	1
	Identification of Location and Coordinates Skills Activities	1
	Marmara Three-Stage Development Model of DMS	1
	Orienteering Applications	2
	Authentic Learning	1
	Activities Based on Historical Empathy	1
	International Baccalaureate Program	1
	Reflective Thinking Approach	1

Many approaches were used during teaching skills in the Social Studies course, as indicated in Table 4. The active learning approach was utilized in the scope of historical thinking skills; conflict resolution training was used for communication and social problem-solving skills; argumentation-based learning was used in critical thinking, scientific process, and decision-making skills; contextual learning was used with conceptual understanding skills; successful intelligence theory was used in thinking skills; inclusive education program was used with critical and creative thinking skills; object-based activity applications were used for change, and continuity perception skills; differentiated teaching was used for a time, and chronology perception skills; map scale use activities were used with scale using skills; orienteering applications were used for spatial thinking skills and map literacy, and authentic learning was used in the scope of critical thinking skills. The International Baccalaureate Program was utilized to study citizenship skills. In addition, applications for the development of geographic skills, empathy, entrepreneurship, the identification of location and coordinates, the Marmara three-stage development model, historical empathy, and reflective thinking were used to build the skills addressed in the thesis. The methods used in the skills teaching processes are presented in Table 5.

Table 5. The methods used in the skills teaching process

	Methods	f
Skills Teaching Process	Field Trip	1
	Demonstration Method	2
	The Use of Current Events	3
	Drama	4
	Problem-Based Learning	3
	Local History	1
	Case Study	3
	Cooperative Learning	7

As demonstrated in the table, various methods are used in skills teaching in the Social Studies course. These are field trips, demonstrations, the use of current events, drama, problem-based learning, local history, case study, and cooperative learning. In this regard, with local history, the skill time and chronology perception was studied; with cooperative learning, the social skill, social participation, social problem-solving, and communication skills were addressed; with the case study, the skills problem-solving, creative thinking, and critical thinking were studied; with problem-based learning, the creative thinking, problem-solving, decision making, and higher order thinking skills were handled; with the use of current events, the skills critical thinking and decision making were investigated; with field trips, the skill critical thinking was studied; with demonstration, the skill drawing and interpreting graphs was examined; and with drama, the critical thinking, social skills, empathy and communication skills were examined. The techniques used in the process of skills teaching are presented in Table 6.

Table 6. The Techniques Used in the Skills Teaching Process

	Techniques	f
Skills Teaching Process	Animation and Digital Map	1
	Geography Information Systems	1
	Digital Story	1
	Critical Reading	1
	Google Earth Application	3
	Concept Caricature	1
	Self-Monitoring Strategies	1
	Founding Mini Businesses	1
	Mobile Application	1
	Historical Novel Use	2
	Representative Image Use	4
	Web-Based Peer and Self-Assessment	1
	Children's Literature Products	1
	Statistics and Graph Use Techniques	1

As indicated in Table 6, many methods have been implemented during skills teaching in the Social Studies course. Accordingly, through statistics and graph use techniques, the skill of graph reading was studied; with children's literature products, the empathy skill was addressed; with web-based peer and self-assessment, communication skills were investigated; with representative image use, the skill of historical thinking was covered; by using historical novels, the skills creative writing and historical literacy were studied; by using mobile applications, critical thinking skills were dealt with; through founding mini businesses, the entrepreneurship skill was studied; with self-monitoring strategies, the skill of self-organization was addressed; with concept caricatures, the skill creative thinking was examined; with animation and digital maps, Google Earth and geographical information systems, the skills spatial thinking and spatial perception were studied; and through critical reading and digital stories, the skill critical thinking was examined.

The investigation of the thesis on skills teaching in the Social Studies course demonstrated that many models, approaches, methods, and techniques were used in the studies. While detailed information was provided about the teaching-learning processes in some of the thesis examined, there were no descriptions in some others. Concerning the reliability of the research, the lack of detailed explanation can be considered a limitation of the study. This issue seems important in providing guidance through experience for future researchers who intend to study skills teaching. Usually, more than one method is reported to have been used in the thesis, which explained the experimental procedures in depth. Moreover, in these thesis, many supportive materials such as worksheets, PowerPoint presentations, pictures, timelines, newspapers, reading passages, and online files were also used. In addition, what is especially considered important in the experimental or application process was explained in

detail in some thesis. In this respect, the situations to which researchers paid attention in their thesis mostly include practices such as receiving in-service training about the subject on which they what to make implementations, conducting needs analyses, obtaining expert opinions about the form, lesson plans, worksheets etc. they designed, basing teaching-learning processes on applications at which the students are competent, providing preliminary information to students about the implementation, and conducting a pilot study.

Findings on the Duration of Implementation

The duration of the implementations in the thesis towards skill teaching in Social Studies course was also analyzed. The length of the implementation periods in the thesis are presented in Figure 5.

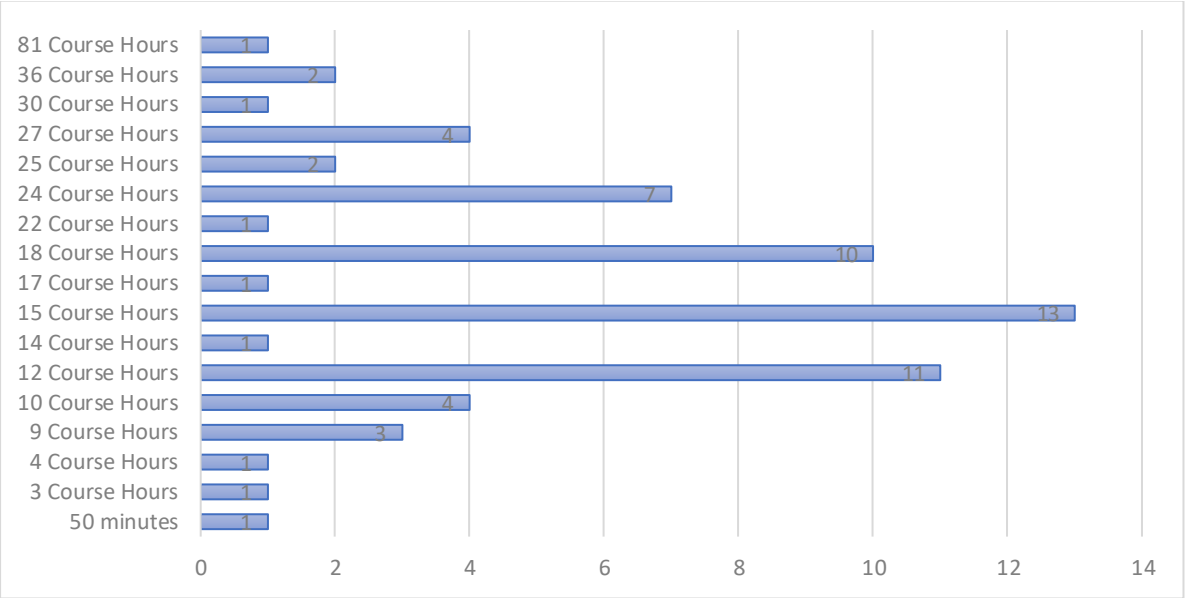

Figure 5. The distribution of implementation durations

As shown in the figure, the implementation periods in the thesis on skills teaching in the Social Studies course ranged between 50 minutes to 81 class hours. The most preferred duration was 15 class hours. 12 and 18 class hour procedures followed it. In most of the thesis, the rationale behind the implementation times was not justified. There were no discussions about whether the time allocated for the implementation was sufficient or not. When the nature of skills teaching is considered, it can be said that the implementation times should not be short. Despite this, some thesis did not mention the implementation times, while there was no implementation altogether in some thesis.

Findings on Assessment

The thesis examined whether the skills discussed in the Social Studies course were acquired were assessed by different methods and techniques. Within this scope, how the assessments were performed is presented in Table 7.

Table 7. The techniques and instruments used in the assessment process of the skills

		f
Way of Assessment	Test	42
	Scale	29
	Rubric-Graded Scoring-Check Lists	29
	Inventory	4
	Observation	7
	Interview	32

As demonstrated in Table 7, the skill acquisition statuses were determined through tests, scales, rubrics-graded scoring keys-check lists, inventories, observation, and interviews in the thesis studying skills teaching in the Social Studies course. In the thesis, the communication skills inventory and problem-solving inventory were observed to be used as inventories. With the rubrics-graded scoring keys-check lists, student products were tried to be analysed. Also, within this scope, students were asked to perform self-assessments, and their communication and

problem-solving scenarios were examined. The instruments developed were the creative writing and decision-making rubric, the drawing and interpreting graphs rubric, and the scientific discussion level graded scoring key. Scales were used in many of the thesis to assess whether the students gained the skills. These scales were the self-organization scale, conflict skill scale, creative thinking skill scale, historical empathy scale, historical literacy scale, social skill scale, problem-solving skills scale, motivational strategies scale, Marmara decision-making skill perception scale, empathic skill scale, critical thinking scale, critical thinking tendency scale, economy literacy scale, scientific creativity scale, and scientific thinking skills scale. The tests utilized in evaluating the skills in the thesis are the test of perceiving time and chronology, spatial visualisation skill test, Torrance creative thinking test, spatial thinking skill test, London Tower test, classical skills tests, conceptual comprehension test, Cornell critical thinking test-X level, and scientific research skills tests. Furthermore, achievement tests for the skills investigated were also devised. Besides, interviews and observations were conducted in some of these thesis. Both closed-ended and open-ended questions were preferred in the interviews. Observations were usually made throughout the implementation period. When these thesis were examined, it was seen that the same measuring tool was reapplied after a certain period to evaluate permanence in some of studies. Nevertheless, it was determined that in a vast majority of the thesis whether the skills turned into behavior was not demonstrated. In other words, student behaviors were not observed after the implementation process regarding skill acquisition. In addition, the problems arising from the assessment tool use were not discussed in the thesis, and in some thesis in-depth information (e.g., development process, reliability, and validity studies) regarding the assessment instrument was not provided. While significant differences were determined between the pretest-posttests of the experimental group in some studies, no significant differences were found between the experimental group and the control group in terms of the post-test. The lack of effect analyses in these thesis can also be expressed as a problem in terms of measurement.

Findings on Problems Encountered During Skill Teaching

In some of the theses examined, it was seen that the problems related to the skill acquisition process were recorded during observations and interviews with the students. These problems are presented in Table 8.

Table 8. Problems encountered

		f
Problems Encountered in Skills Teaching	Having Difficulties during the Activities	4
	Boring Activities	4
	Facilities and Technical Problems	5
	Problems Encountered in Group Works	8
	Insufficient Time	3
	Age Level of the Students	1
	Forming Associations with Other Skills	1
	Exam Stress	3
	Homework Overload	1
	Not Doing Homework	2

Some problems occurred during the implementation process, such as students' having difficulties in the activities, students' perceiving the activities as boring, facing technical problems, the emergence of problems during group works, the insufficiency of implementation times, the inappropriacy of the skills to the age level of the students, the lack of relating the skill in focus with other skills, exam stress, assigning too much homework and not doing the assignments. It can be stated that these problems are usually related to the application process. In addition, when the problems were addressed, it was observed that the researchers gave less information about the problems they caused.

Findings on Suggestions

The examination of the suggestions made in the thesis on skills teaching in the Social Studies course yielded that these suggestions pooled under two headings, which are recommendations for stakeholders and recommendations for the learning-teaching process. In line with this finding, the results are demonstrated in Table 9.

Table 9. Suggestions

Suggestions in Theses		f
Suggestions about Stakeholders	Updating the Curriculum and Course books	42
	In-service Training	14
	Providing Infrastructure Support to Schools	14
	Revision of the Teacher Education Programs	11
	Revision of the Evaluation System	4
	Parent-Teacher Cooperation	4
	Getting Support form NGOs	2
	Being a role model to Students	1
Suggestions about Teaching-Learning Procedures	Use of Technology and Visual Materials	12
	Making Associations with Other Courses	7
	Student-Centered Education	5
	Increasing Implementation Time	4
	Using Literary Products	3
	Cooperation-Based Learning	3
	Covering Topics from Life	3
	Utilization of Social Problems	2
	Utilization of the Orienteering Sport	2
	Use of Games	2
	Utilization of the Education of Controversial Topics	1
	Use of the 5E Learning Model	1
	Utilization of the Discussion Method	1
	Club Activities at Schools	1

As shown in Table 9, in the thesis examined, the suggestions concerning stakeholders included providing infrastructure support in schools, increasing the visuals of books, reviewing the evaluation system, revising teacher training programs and providing them with in-service training, updating curricula and textbooks, and cooperating with family, school staff and non-governmental organizations. The most frequently mentioned recommendation was related to updating the curricula and course books. It was followed by providing school infrastructure support and in-service training to teachers. As demonstrated, the thesis acknowledged all stakeholders in their suggestions, from decision-makers to families. The suggestions about teaching-learning processes are also presented in Table 9. Regarding the learning-teaching process in the acquisition of skills, the suggestions of carrying out club activities in schools, extending application times, adopting a student-centered approach in the implementation process, using social problems as a learning tool, utilizing orienteering sports, using controversial subjects, associating skills with other courses, using games and literary products in lessons, collaborative learning, using 5E learning model and discussion method, making use of technology and visual materials and selecting topics from life were included in the thesis. The suggestion with the highest frequency was towards using technology and visual materials. The second most frequent recommendations following this were associating skills with other courses and implementing a student-centered approach. To summarize, considering the suggestions about the teaching-learning processes, it is possible to say that they were generally about the methods-techniques that can be employed in the lessons.

Discussion and Conclusion

According to research results, it was determined that the thesis on skill teaching in the Social Studies course were carried out in all three methods: qualitative, quantitative, and mixed. It can be said that the pretest-posttest model with a control group is frequently used in skill teaching. However, researchers using qualitative models predominantly preferred action research. This finding is similar to the research results by Kartal (2020), who investigated studies about Social Studies education at primary schools. It is possible to comment that action research is largely used in qualitative research studies in Social Studies teaching. The thesis examined to confirm that in the Social Studies course, there are mainly attempts towards practical applications in skills teaching, and importance is given to the teaching processes.

The investigation of the thesis outlines that the development of many skills in all three categories was studied in the scope of the Social Studies course. The skills studied the most were thinking skills in the first place, next came instrumental skills, and lastly, social skills were researched. It was observed that the skills related to social skills were remarkably under-investigated compared to the other skill groups. Six of the 14 research studies in this group were on empathy skill. It can be said that thesis on social participation, communication, social skill, and conflict

resolution were relatively few. Even though it is a skill specific to the Social Studies course, social participation was examined only by one thesis. Parker (2010) defines social skills as behaviors that enable the individual to build positive relationships with the other individuals that constitute the society and maintains that these skills have a substantial role in the individual's socialization process. In this respect, it can be said that neglecting these skills is a severe problem in the Social Studies course, which constitutes a crucial dimension of citizenship integration.

Among the skills investigated in the thesis, instrumental skills were studied primarily by focusing on abilities connected to geography. There are relatively few research on literacies among this group. It is believed that the new emphasis on literacies after the 2018 Social Studies curriculum is to blame for this deficiency. Literacies are viewed as abilities that are included in education policy and can influence education, which is something that must be considered (Aşc, 2009; nal, 2010). From this vantage point, it is possible to assert that future graduate dissertations should focus more on literacies.
It was determined that some of the thesis examined did not provide detailed explanations for the teaching-learning processes. In terms of the reliability of the research, explanations for interventional processes are considered important. Furthermore, it can be said that sharing research processes and experiences will be beneficial in guiding future researchers who will study skills teaching. In this regard, studies carried out abroad with researcher experiences shared in detail can be taken as an example.

In the thesis examined, it has been observed that the researchers mostly paid attention to issues such as in-service training, needs analysis, obtaining expert opinion for the developed materials, basing the teaching-learning process on the applications in which the student is active, giving preliminary information about the application process to the students, and piloting. This situation can have a positive impact on the quality of the studies.

In most of the thesis, no scientific justification was laid out about the time allocated for the implementation. Whether the implementation duration was sufficient for gaining the skill was also not explained. Moreover, in some thesis the implementation period was not stated at all. When the nature of skills teaching is considered, it has been observed that the application periods are relatively short. Studies are designed during which skill teaching is not possible when the time allocated is considered. Researchers work with students in schools of national education, and they strive to carry out their implementations without disrupting the education processes of the students. Likely, the course hours that the researchers could take permission for to conduct their studies was limited, and this situation was reflected upon the implementation lengths. Even though the insufficiency of the implementation times of the studies can be explained with this cause, it does not change the fact that it negatively affects the quality of applications. Establishing more research schools can be considered as a solution to this problem.

When the assessment tools used in the thesis are examined, a wide range of instruments and techniques such as tests, scales, rubric-rated scoring key-checklist, inventories, observation, and interviews were used to evaluate skills. While some of these instruments were readily available, the researchers developed some instruments for the research purpose. Nevertheless, it can be said that the problems faced during using these instruments were not shared with the readers. As mentioned above, this creates limitations about sharing researcher experiences. In some other studies, no accounts were even provided about the instruments' development process and reliability and validity information. Besides, although some results required asking additional questions, this seems to be ignored in some studies. To exemplify, in a study in which significant differences between the pretest-posttest measurements were found in the experimental group whereas no significant differences were detected between the experimental and the control group, an effect analysis that would reveal the level of effect of the experimental process performed was not made. Instead, the research was completed with the comment that the experimental process was effective. These situations pose a problem in terms of assessment and undermine the quality of the research. In the literature, similar problems were discovered in similar areas (Boztunç Öztürk et al., 2015; Gül and Sözbilir, 2015; Kaya Uyanık et al., 2017; Şahin and Boztunç Öztürk, 2018). Kartal's (2020) research shows that qualitative research on Social Studies teaching has similar problems in terms of data analysis.

The analysis of the thesis also demonstrated that the researchers were confronted with some problems during the process of skill teaching. Some researchers stated that they faced problems because the implementation time for the skill acquisition was insufficient. The fact that the time allocated for the implementations might be unsatisfactory in the thesis was mentioned above. The statements of the researchers support the comment about the deficiency of time for the implementations. The other problems expressed by the researchers in the process are the inappropriacy of the skills studied to the developmental level of students, the unsuitability of the activities prepared for the students' levels, and the failure of the activities to be interesting. It is possible to say that attention has been paid that the skills covered in Social Studies curricula are following students' development levels. In this

case, the problems in the studies are thought to be arising from the implementations. It might be put forward that the content and activities prepared by the researchers might have had an impact in the appearance of the problems mentioned. When these problems are examined, it can be said that the researchers did not discuss sufficiently the problems that may be caused by themselves. They avoided expressing these issues in their thesis.

When the suggestions made by the researchers at the end of the process were examined, the most mentioned recommendation in the thesis was updating the curriculum and textbooks. The subsequent common suggestions were eliminating school infrastructure deficiencies and providing in-service training to teachers. Apart from these, suggestions such as making associations with different disciplines during the teaching-learning processes and adopting a student-centered approach were also made. The meta-synthesis studies in the literature indicate that these problems are common (Deveci and Aykaç, 2019; Kartal, 2020). The recommendations given by the researchers at the end of the research were generally about using the teaching methods and techniques whose effectiveness they tested. As mentioned earlier, the studies do not include recommendations based on the experiences of researchers during the research process. It can be said that this is a significant deficiency in the national literature.

Recommendations

Research findings indicate that social skills teaching is the least commonly investigated subject in the thesis. Conducting more studies into the teaching of these skills can be suggested.

The research results reveal that the application times are inadequate in the process of skill teaching. It is thought that the limited hours of lessons that researchers allowed at schools have an impact on the emergence of this condition. For this purpose, increasing the number of research/application schools can be considered as a solution.

It was observed that some of the researchers did not share comprehensive information and validity and reliability measurements about the tools they used to assess skills and did not approach the analysis results critically. It is thought that care should be taken about these issues in terms of the quality of the research.

Another observation in this study is that the researchers did not include comprehensive information about the application processes in their thesis, did not address the problems that occurred in the process adequately, and did not share their experiences with the process. Regarding the reliability of research and guidance to future researchers, sharing research processes and experiences will contribute positively to the nature of the studies.

In this study, the skills investigated in the social studies course were examined in the scope of graduate thesis. Further studies may consider evaluating articles, papers, etc., written on this subject.

Descriptive content analysis was used as a method in this present research. Accordingly, different research studies can be carried out by choosing other methods.

This research focused on Social Studies in skills teaching. The status of skill teaching in different disciplines can also be demonstrated in other studies.

Author (s) Contribution Rate

The authors contributed equally to the article.

Conflicts of Interest

The authors declared no potential conflicts of interest regarding the research, authorship, or publication of this article.

Ethical Approval

Ethical approval is not required for this study.

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Professional Identity Development During Video Cases Discussions: Does It Make a Difference Whether Teacher Candidates Focus Their Own Videos or Experts' Videos?

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Professional Identity Development During Video Cases Discussions: Does It Make a Difference Whether Teacher Candidates Focus Their Own Videos or Experts' Videos?

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Abstract

This research aimed to investigate dimensions of professional identity that have been reflected in the different video-case discussions of teacher candidates and explore the differences between own and expert video case discussions. In this qualitative case study, data were obtained from eight teacher candidates through online video case discussions implemented in three cycles among two separate groups. In the discussion platform, while one group focus on their own videos, the other group focus on expert teachers' video. As a result, professional identity indicators, gathered under three themes, named task-based, profession-based, and self-interpretation-based indicators, were reflected in the discussions. Moreover, it is noteworthy differences between the own video-case discussion group and expert video-case discussion group in 'profession-based and 'self-interpretation-based' dimensions of professional identity. Results suggest that especially discussing own video-cases can be a productive tool that helps the teacher candidates to make stronger theory-practice connections and feel like 'a professional teacher'.

Keywords: Professional development; Professional identity; Teacher candidates; Video cases discussion

Introduction

> Learning to teach is not a mere matter of applying decontextualized skills or of mirroring predetermined images; it is time when one's past, present, and future are set in dynamic tension. Learning to teach—like teaching itself—is always the process of becoming: a time of formation and transformation, of scrutiny into what one is doing, and who one can become.

As stated by Britzman, learning to teach—that is, to be a teacher—can be considered a complex, challenging, multidimensional, and subjective process of identity construction, which, in turn, can be seen as a key to a teacher's professional life. Definition of teacher education as "the first and perhaps the most important stage in the development of professional identity (PI)" (Putnam & Borko, 1997), shows the importance of identity development in the professional life anew. Identity development has a notable impact on teachers' teaching, professional development, and attitude toward educational changes (Beijaard, Meijer, & Verloop, 2004), furthermore, according to Bullough (1997) it is essential to the practice of teacher education.

The development of PI is an individual maturation process created before the profession, shaped by meaningful practices in teacher education, and evolving during the practice of the profession (Chong, Low, & Goh, 2011). With the increasing awareness and competencies of the profession, teacher candidates (TCs) may shape their professional goals and desires and begin to define themselves and feel as representatives of their role. Although the PI development process is quite personal, it is driven and constructed through communication and interaction in the psychosocial context of teacher education (Beauchamp & Thomas, 2009; Ezer, Gilat, & Sagee, 2010; Ivanova & Skara-MincŁne, 2016; Izadinia, 2013; Olsen, 2008; Rodgers & Scott, 2008). For instance, structured educational contexts (teacher education programs and practice environments), learning communities, and collaborative environments in which teachers and TCs participate can be used to support their PI development (e.g., Izadinia, 2013; Olsen, 2008). Participation in these environments or processes shapes TCs' thoughts, values, beliefs, and expectations depending on the effect of their self-perception and others' perceptions of them. In other

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words, professional identities of teachers/TCs are constructed through reflective inquiries in teacher education (Bjuland, Cestari, & Borgersen, 2012).

On the other hand, research has long emphasized the gap between theory and practice in teacher education, and studies using various technologies have been designed. According to Korthagen (2010), how theoretical knowledge is applied in situational and contextual events can be observed and experienced with these technology-supported processes; thus, it is easier for TCs to acquire real classroom experience and repertoire with the help of technology. Herein, the videos present multiple lenses for the TCs to understand and construct good teaching practices by examining several teaching patterns (Goldman, 2007), and they facilitate the professional development of candidates by supporting them in learning from experience (Borko, Jacobs, Eiteljorg, & Pittman, 2008; Kleinknecht & Schneider, 2013; Osmanoglu, Koc, & Isiksal, 2013; So, Pow, & Hung, 2009; Yuan & Mark, 2018). In this regard, video case discussion, in particular, helps create self-reflection and can support PI development by enabling TCs to gain new skills that are part of PI. However, it is important to consider whole variables that shaped professional development process during the video discussions. Because solely sharing and discussing teaching videos does not automatically guarantee effective learning and teaching or identity development. In this regard, the type of video and the design of discussion process are quite significant. In the literature, studies using various types of videos in different contexts have been conducted to support the teaching and professional development of teachers or TCs (Kleinknecht & Schneider, 2013; Rosaen, Lundeberg, Cooper, Fritzen, & Terpstra, 2008; Zhang, Lundeberg, Koehler, & Eberhardt, 2011). However, there is no empirical evidence about how different types of video case discussions influence TCs' PI development. In other words, it has not been investigated how the PI of TCs is affected and in what dimensions it has developed during different discussions regarding their own or experts' videos. It is known that since it is aimed to train TCs as the teachers with effective and desirable PI, it is important to determine the instructional design processes that entirely support their identity development in teacher education process. Therefore, we investigate the following research question:

"How does different video discussion process influence PI development of TC?"

In order to answer this question, we examined the dimensions of PI reflected in the different video case discussions, and the differences between these dimensions. The differences between video cases are designed by changing the subject of the videos (own videos or expert videos). First, this paper reviews the PI of teachers and its development in teacher education, presenting video cases and their discussion. Second, it discusses a study conducted to explore how TCs' PI development reflected different video case discussions. We are aware of the difficulties in defining the concept of teacher identity affected by multidimensional processes; therefore, we do not intend to present a clear definition of PI or to impose a specific PI on video case studies. On the contrary, by examining PI from a broad perspective, we aim to reveal dimensions of professional identities developed through the reflection of TCs during different video case discussions. Moreover, we want to shed light on with the comparative design process to the future PI development research.

Definition and indicators of PI

PI is a critical concept in understanding teachers' lives and professional development, evaluating their quality, and interpreting their commitment and career decisions (Day, Elliot, & Kington, 2005; Hong, 2010; Korthagen, 2004). In its most basic form, PI can be defined as "the perception that teachers have of themselves as teachers" (Cattley, 2007). This self-knowledge in the profession is shown in practical professional teaching activities, feelings of belonging, and learning experiences (Timoštšuk & Ugaste, 2010). These meanings, perceptions, knowledge, and images created by teachers or TCs about themselves in their profession are at the heart of their PI (Chong & Low, 2009; Lim, 2011). Therefore, this concept, which reveals who teachers are as professionals, is considered to reflect their competencies, responsibilities, and relationships. According to Avraamidou (2014), teachers' PI can be seen as a lens for teacher preparation, enabling them to understand learning and development processes. Moreover, the content that they teach; their choices of teaching practice; their working behaviours; and their relationships, emotions, values, commitment, and decisions about leaving the profession are connected to their PI (Beijaard et al., 2004; Flores & Day, 2006; Hong, 2010; Izadinia, 2013). Although the literature presents multiple interpretations, in this study, PI is considered the personal narrative of a (constantly changing and reshaping with interaction) core perception about their roles, their profession, and themselves as teachers.

Despite being in the core of professionalism, the literature shows no consensus on the indicators or shapers of teachers' PI. While some studies consider self-efficacy and intrinsic job motivation as indicators of teachers' PI (Tajeddin & Khodarahmi, 2013), some deal with self-image, self-esteem, job motivation, task perception, and future perspective (Kelchtermans, 2005) or professional orientation, task orientation, self-efficacy, and commitment to teaching (Lamote & Engels, 2010).

As there was no consensus in the literature, Atal and Deryakulu (2019) created a wide framework for the indicators of teacher identity based on fundamental research on PI (e.g., Hong, 2010; Kelchtermans, 2005; Lamote & Engels, 2010). According to this framework, value, job satisfaction, job motivation, self-image, self-esteem, thoughts and beliefs, task perception, knowledge and skills, self-efficacy, future perspective, and commitment to the profession were discussed as indicators of PI. Since Atal and Deryakulu (2019) have handled almost all the variables affecting PI —offered individually in certain studies—as a whole, this research takes their PI framework as a basis. When the limitation of a common and broad framework related to PI indicators in the literature is considered, we believe that a wider framework could be presented with this framework.

Development of PI applying reflective activities in teacher education

Realizing the value of PI development in teacher education, researchers have conducted research based on various instructional design processes and practices to support its development (e.g., Bullough, 1997, Flores, 2020; Izadinia, 2013; Lamote & Engels, 2010; Lutovac & Assunção Flores, 2021). Over the past decades, reflective activities, such as participating in an online discussion group, a community of practice, and video reflection cycles, have been implemented as key elements in exploring the process of TCs' identity-construction (Delahunty, 2012; Maclean & White, 2007; Yuan & Mak, 2018). Because with these reflective activities, individual or interactive processes can be created in which TCs inquire their pre-existing beliefs and practices for further actions and improvement (Timoštšuk & Ugaste, 2010; Yuan & Mak, 2018).

Reflection, seen as a process of self-discovery, is considered an important way for teachers/TCs to get a profound sense of self (Beauchamp & Thomas, 2009). Furthermore, reflection is considered central in both teacher education and teachers' PI development (Beauchamp & Thomas, 2009; 2010; Sutherland, Howard, & Markauskaite, 2010). Although there are many ways, video cases are used to develop self-reflection skills of TCs, novice and expert teachers. For instance, Maclean and White (2007) and Sutherland et al. (2010) have used the "video reflection cycle" as an appropriate reflective tool to make changes in TCs' cognitive and professional stance. When teachers come together to engage with video case materials in a collaborative environment, they can reflect on, analyse, and discuss their in-teaching and on-teaching experiences by creating meaningful professional knowledge. In other words, it is possible to support teachers'/TCs' reflections and professional development through video case discussion. The next section provides explanations for the educational value of video cases and usage of different types of video discussions (discussion of own or expert videos).

Video cases and discussion of own or expert videos

In the literature, video cases are used for a variety of purposes; for instance, they can present the diversity, richness, and complexity of classroom activity and show examples of good teaching practices. On the other hand, teachers can explore the real class environment, think about these classes, review their own practice, gain abilities to analyse and develop perspective, learn from their own or others' experiences, and reflect upon their own teaching experiences with video cases (Borko, et al., 2008; Osmanoglu, Koc, & Isiksal, 2013; Sherin & van Es, 2009; Seidel, Stürmer, Blomberg, Kobarg, & Schwindt, 2011). Video cases remove the tendency to see teaching as a technique and routine (Darling-Hammond & Bransford, 2005) and help candidates develop professional vision and expertise, experience different learning situations, and gain self-assessment skills (McDonald & Rook, 2014; Seidel et al., 2011; Sherin & van Es, 2009).

Besides, it is important for TCs to watch and discuss the different types of video cases with peers to experience a change in their feelings and knowledge about teaching, gain a more realistic picture of the learning environment, and ensure their development with the views of others (Hatch, Shuttleworth, Jaffee, & Marri, 2016; Koç, Peker, & Osmanoğlu, 2009). Thus, by watching and discussing videos, teachers can engage in the critical analysis of their strengths and weaknesses in practice and develop new insights to inform their teaching routine/habits/experience (Yuan et al., 2020; Zhang, Lundeberg, Koehler, & Eberhardt, 2011). Moreover, by discussing their own or others' videos, they can support their self-efficacy, job satisfaction, motivations, professional beliefs and attitudes, decision-making and problem-solving skills, and professional identities (e.g., Hatch et al., 2016; Maclean & White, 2007; Sancar & Deryakulu, 2020; Ulusoy & Çakıroğlu, 2020; Zhang et al., 2011).

However, little is known about the specific effects of different types of video cases, and it remains unclear how to handle video cases most effectively. For instance, while some researchers argue that watching expert videos supports professional development more (Hatch et al., 2016; Hover, 2020; Seidel et al., 2011), watching one's own videos could be considered valuable since it provides deep knowledge about oneself (Bonaccorso, 2020;

Borko et al., 2008; Rosaen et al., 2008; Seidel et al., 2011; Zhang et al., 20119). Although candidates' own videos, peer videos, or expert videos are used to support professional development in teacher education, understanding the affordance and challenges related to each is vital for defining and integrating a more beneficial type of video — especially in PI development. However, as few studies compare two groups (own videos or expert videos), what types of video discussions have more impact on teachers' professional development remains unclear (e.g., Seidel et al., 2011). According to Borko et al. (2008), who have a similar view, despite the widespread use of videos for providing learning experiences to teachers, little systematic research has been conducted on the feasibility and effectiveness of various types of videos.

By effectively discussing video cases, TCs can construct meanings on their professional knowledge and teaching and develop their own professional identities. However, the effect of video types on TCs' PI development has not yet been a subject of research. This study unveils the reflection processes within different types of video discussions that are effective to support TCs' professional identities and the PI structure that emerges through them.

Methodology

The case study was used as the research methodology to investigate how PI is developed in a particular discussion group (own or expert videos). It was seen as a valid form of inquiry, exploring a broad scope of complex phenomena, such as human behaviour and social interactions, to reveal the meaning process of individual experiences (Merriam, 2009). In this research, the community of TCs participating in the video case discussion investigated the phenomenon of PI development. This case provides a deep inquiry into PI development in different types of video discussion with cross-checking.

Participants

This case procedure was conducted in the Teaching Practice II Course throughout the last semester of the participants' bachelor's program at a faculty of educational sciences within a department of computer and instructional technology education in Turkey. While, in the previous term, all TCs had observed the school context, real class, and teaching of expert teachers, during this term, they gained in-class experience with real classroom practices. The research was conducted with eight TCs (six male and two female) willing to participate. Table 1 details the information of the participants.

Table 1. The participants in the research groups

Groups	Pseudonyms	Sex	Age
Discussing Own Video Cases	Elif	Female	22
	Burak	Male	23
	Mehmet	Male	21
	Ali	Male	22
Discussing Expert Video Cases	Zeynep	Female	23
	Selim	Male	22
	Yunus	Male	21
	Umut	Male	22

As seen in Table 1, the TCs' average age was 22 years old, and none of them had previous in-class teaching experience. In order to ensure the privacy of the participants, pseudonyms are used.

The case procedure

Before starting the process, the participants were divided into two groups: four of them in the "Discussing Own Video Cases" group and the other four in the "Discussing Expert Video Cases" group. Then, a workshop was conducted to help familiarize the TCs with the digital video cases and discussion platform. Shooting and editing techniques, video uploading, and the discussion platform were presented with the aim to have short and edited videos prepared by TCs to stimulate discussion around issues that caught their attention. This workshop was scheduled to include time for recording and editing three video cases for each student. In this regard, TCs were made aware of their responsibilities at the beginning of the process.

Since each group was only asked to see and participate in their groups' video discussions, separate discussion platforms were created for both working groups. It was announced that the researchers would not participate in

the discussion process so that the candidates could contribute to the discussions comfortably and safely, and the data collection process started by randomly allocating teachers to the groups.

Three basic things are expected of them throughout the data collection process.

- Recording the whole 40-minute teaching video in accordance with the schedule planned at the beginning of the process (own teaching videos or experts' videos according to the group they are involved in)
- Editing 40-min videos into 10–15 min of video cases consisting of important parts that caught their attention. While editing these videos with editing program, they can add explanations onto the video case that attract their attention, or they want to tell more. Also, we called it as adding reflective thinking on action.
- Sharing the videos in the discussion platforms and discuss significant/different points with their own group.

This process was repeated three times for each teacher candidate. Therefore, each cycle for each group included four video cases, and 12 video cases in total were produced and discussed in each group. Figure 1 summarizes the case procedure.

Figure 1. The research procedures of each group

Data source and analysis

The data of this research were collaborative discussion comments reflected in the discussions in own and expert video case groups. We analysed discussion comments on a total of 24 video cases (12 for each group). The meaning-making process involved combining, reducing, and interpreting statements of participants through the researchers' understanding (Merriam, 2009). In this regard, we transcribed video discussion comments verbatim. Afterward, we conducted deductive and inductive reasoning processes for data analysis. Deductive analysis includes coding data using an existing framework (Patton, 2002); as the first step in this phase, to address research question, we divided each video case discussion message into conversation units based on shifts in the substantive focus of the conversation (e.g., classroom management for teaching). We then coded each conversation unit using the coding framework of Atal and Deryakulu (2019) on teacher PI. According to this coding framework, value, job satisfaction, job motivation, self-image, self-esteem, thoughts and beliefs, task perception, knowledge and skills, self-efficacy, future perspective, and commitment to the profession were discussed as indicators of PI. During the coding process, more than one idea was often expressed in some messages, and these resulted in multiple coding. For instance, when the TCs' comment included, "So, we have to solve the problems of other teachers as well as teach the lesson well." it was related to the task perception dimension of PI, or, when the comment included, "Thank you, guys; from your comments, I understood once again what a valuable job we do." this was related to the value dimension.

On the other hand, although Atal and Deryakulu's (2019) framework was taken as a basis for the coding process, the codes that were thought to be related to PI, but not to the categories in this framework, were determined; new categories were deducted from these related codes. Finally, they were addressed under certain themes. For instance, one teacher candidate gave a comment that included, "We have to teach the lesson in 40 minutes, so we have to plan the time well. After watching the video, it worried me to think that I would not be able to teach the lesson." This comment was coded in relation to both "emotion" and "time management skill"; therefore, the "management skills" and "emotions" categories were added to the coding framework since no related ones are included in that of Atal and Deryakulu (2019). After one researcher completed the coding process, 45% of the entire dataset was independently analysed by two co-authors and reached an agreement rate over 90%.

Validity and Reliability

For reliability of coding, 45% of the entire dataset was randomly selected and independently coded by the other co-author. Inter-rater reliability was analyzed using Cohen's Kappa Coefficient. Cohen's Kappa Coefficient was determined as 90%. For the transferability and consistency of the study, the data collection process was explained in detail and the results were supported with direct quotations. Pseudonyms were used for each participant instead of using a real identity.

Results

Based on the research questions, first, the findings about the indicators of PI reflected in video case discussions were presented. Afterward, the findings about the consequence of discussing own or expert video cases on TCs' PI were comparatively presented.

Indicators of PI reflected in video discussions

As a result of the analysis, identity indicators reflected in the discussions were gathered under three themes. These can be named as task-based, profession-based, and self-interpretation-based indicator of PI. Figure 2 shows the indicators of TCs' professional identities reflected in discussed video cases.

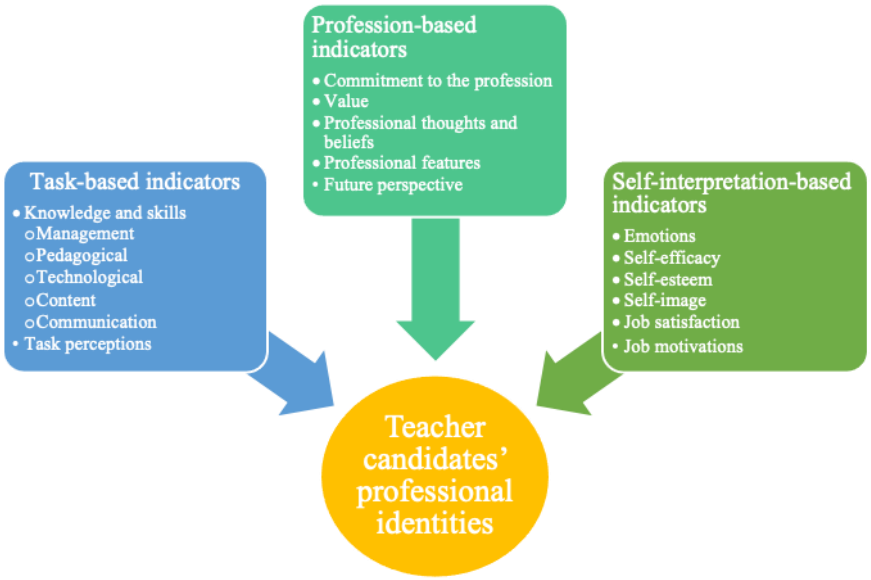

Figure 2. Indicators of teacher candidates' professional identities

As seen in Figure 1, one of the PI indicators that the TCs reflected in the video case discussions was named as task-based indicators. Under these indicators, the tasks and responsibilities of teachers in schools and their knowledge and skills were included. In particular, classroom management and communication skills, content, technological and pedagogical knowledge, and skills were grouped under the category of knowledge and skills. Moreover, the duties and responsibilities given by school administrators and the expectations of other teachers about information and communication technologies (ICT) formed the job perceptions of the candidates.

Second, viewing teaching as a profession and attributing meaning to it was identified as another critical dimension that shapes their professional identities. TCs' thoughts and beliefs about the profession, perception of value and commitment to the profession, professional features, and future perspectives were discussed under the profession-based indicator.

Third, the variables related to the TCs themselves, their self-perceptions, and inner evaluations were gathered under the self-interpretation-based indicator. Depending on this indicator, teachers' self-efficacy beliefs, self-esteem, emotions, motivation, satisfaction, and the self-image that they acquired in the process reflected the more intrinsic dimensions of PI. Based on these PI indicators determined as a result of the analysis, the differences between two discussion groups are presented below.

Differences in task-based indicators of PI between own and expert video case groups

In the first discussion cycle, in both video discussion groups, TCs focused more on the expert teachers' attitudes, stance in the classroom, communication skills, classroom management experiences, and content knowledge. According to their reflections, attracting attention, ensuring silence, and adequately presenting the content was vital for the teaching profession. Furthermore, having a sloppy daily appearance was interpreted as not valuing the profession enough and as unwillingness to teach.

> *Imagine that the teacher comes to class in jeans or pants and a jacket, like an officer. I think the teacher wearing pants and a jacket is aware of the profession, task, and importance of their job; however, the teacher wearing jeans does not take teaching seriously and does not care about it. (Zeynep, 1st discussion cycle)*

On the other hand, not caring about students enough, ignoring them, and/or not responding adequately to their questions attracted TCs' attention throughout the discussion in both groups. Furthermore, with the deficiency of good classroom management patterns, they discussed and configured the management problems and skills that ICT teachers must have.

> *While the teacher should be good at classroom management, I don't think she is very good at all. (Selim, 1st discussion cycle)*
> *... At least he could answer the student's question. The students say they have finished and ask the teacher what to do. Sorry, but the teacher does not respond willingly, does not react. The student is willing to apply [themselves], but the teacher ignores them. This is very negative; it may cause the student to lose interest, and we should pay particular attention to it. (Yunus, 1st discussion cycle)*

Over time, the focus of the discussion shifted. At first, discussions had become deeper and more solution-oriented beyond the determination of the problems in both groups. Moreover, discussions focusing on the teacher and the teaching process started to shift to students' achievement, obstacles, and solutions to learning problems. However, in these in-depth discussions, while the exemplary behaviors of experts were discussed in the expert video case group, TCs' own improvements were evaluated in the other group. In particular, TCs discussing their own videos tried different methods and techniques with technologies over time and reflected on their influence.

> *Instead of talking while using a projector, if she had had the material in her hand, she would have attracted the attention of the students and enabled them to perceive rather than memorize. (Elif, 2nd discussion cycle)*
> *The teacher saying "Those who finished the application should turn off their screens so that I can know who finished it" both prevents students from dealing with other things on the computer and shows which student has difficulty in the application. (I'll try this in my lecture too.) (Umut, 3rd discussion cycle)*

While, in both discussion groups, the expectations of the school administration were reflected in the perception of the task, the field of technology has begun to establish a framework for structuring teachers' professional identities in the own video discussion group. Moreover, the techno-pedagogical competencies of the teachers started to emerge in the own video discussion group and structured the qualities that they should have as ICT teachers—for instance, using technology effectively and integrating this technology into the process at the right time.

> *I saw that, when we organize the lab before the lesson starts, and when we select and plan the technology according to the content, the teaching is more effective. (Burak, 2nd discussion cycle)*
> *Having the materials done in Scratch by forming small groups and then [performing] peer evaluation ... The teacher was very nice. I think you are going to be a good teacher, Elif. (Mehmet, 3rd discussion cycle)*

Differences in profession-based indicators of PI between own and expert video case groups

In the first discussion cycle, the TCs in both groups frequently discussed teachers' general features. For instance, criticizing expert teachers' behavior in the videos, TCs defined qualities of ICT teachers, such as practical skills to present content, willingness to teach, organization, motivation to teach, and good communication abilities.

> *The teacher uses his voice effectively and explains it step by step down to the smallest detail. Even when I was watching the video, I could open the Tinkercad application and do it even if I didn't know it. This is important. (Selim, 1st discussion cycle)*
> *The students are standing, and one is playing an instrument in the middle of the class. The teacher is reluctant, uninterested. This is indeed the first time I've seen such a class. Unbelievable. I saw how I should not be in that lesson. (Umut, 1st discussion cycle)*

Over time, in both groups, discussion comments turned from more general teacher features to field-based features. While discussing their ideas about profession based on technology, the TCs pointed out that ICT teachers should use new technology, organize hardware, find solutions to technological problems, and enrich teaching with technology. These characteristics, which were vital to them, reflect their perceptions of professional roles.

> *As you can see in the video, deficiencies in the laboratory environment can cause problems in starting the lesson and attracting the attention of the students. Therefore, we should pay attention to this before starting the lesson, review all the problems in the lab, and correct the deficiencies. (Yunus, 2nd discussion cycle)*
> *I was very hesitant to try new technologies and applications at first, but I should not avoid this. (Ali, 2nd discussion cycle)*

The most significant differences between the two groups were reflected in the dimensions of commitment, value, and future perspective. Remarkably, the comments in the own video case groups made by their peers significantly contributed to their professional development, increasing the willingness to maintain the profession and their outlook for the future. For instance, with regard to receiving positive comments from peers, TCs positively appreciated their progress and expressed their hope of improving in the future. This discussion process helped them psychologically and positively affected their value perception and professional commitment. Candidates now feel that they are stronger teachers.

> *Your confidence in mastering the content, the lesson, and the classroom is reflected in your smile. It is obvious that you love your job and will do it. All of you are good; we are together in this first test to begin the profession. (Mehmet, 3rd discussion cycle)*
> *Burak, first of all, your video is excellent, and your effort is very clear—thank you. You set the rules at first; that's good, of course. You cared and came to the lesson prepared, which was obvious from your clothes and [teaching] material. I am sure you will never break your line. I really appreciate and envy you. (Elif, 3rd discussion cycle)*

Differences in self-interpretation-based indicators of PI between own and expert video case groups

In the discussions, we detected the greatest difference in the self-interpretation-based indicators of PI. Although not reflected in the expert video case discussion, the dimensions of emotions, self-efficacy, job motivation, and self-perception especially attracted attention in the last video discussions of the own video case group. While discussing their own videos, TCs receiving positive comments and praise from their peers for their videos increased their job motivation, job satisfaction, and self-efficacy perceptions and started to reflect positive emotions. Finally, these TCs enjoyed being in class, experiencing the planned processes, and being happy to watch and discuss their improvement. Some TCs even positively appreciated their progress and expressed their hopes of improving in the future.

> *Elif, I see a lot of progress in you. You were already successful—you were worthy of this profession; now, you are even better. You have come a long way. We've all come a long way though. (Mehmet, 3rd discussion cycle)*

Furthermore, the most significant change that emerged among candidates discussing their own videos was that they felt like teachers over time thanks to their classroom stance, improved management, and communication skills. Moreover, this change and development were reflected in their discussions. TCs appreciated and praised both themselves and their peers for their reflected development; they also stated that they were ready for real teaching life by eventually feeling like teachers as their tensions and worries diminished and they began to feel more confident.

> *Your valuable comments have enlightened me so that I can do my part in tomorrow's upbringing. You interpreted it [my teaching] from so many different angles without dismantling it or hurting*

me, and you helped me improve and feel stronger. I sincerely thank you all. I'm so happy now. (Burak, 2nd cycle)
Now, we believe even more that we will all be good teachers. I say that we are really good at teaching now. We have developed together thanks to you guys. Thank you all. (Elif, 3rd cycle)

Discussions and conclusions

Professional development could be seen as a process that begins with teacher education and continues throughout a teacher's professional life. Sancar, Atal and Deryakulu's (2021) research underlined that professional development is affected by a teacher's characteristics, teaching contents, and strategies/methods and the others with whom teachers interact as well as the quality of these interactions. We believe that TCs and new teachers must develop the repertoire of the real teaching process to meet the varied demands that they face and to continue practicing their profession with satisfaction. Thus, to begin professional life with a powerful attitude, it is significant to enrich teacher education with activities that will support professional development and achieve the desired PI formation.

In this research, it is aimed to examine PI structures in the process of video case discussions that are structured differently. According to the findings on one hand, this study offered a wide framework that illustrates the indicators of TCs' PI composed of three dimensions. In this broad framework, it can be seen that the variables structuring the PI of TCs were be grouped under task-based, profession-based, and self-interpretation-based indicator. Since no research has been found that grouped PI indicators holistically, it is thought that this finding is valuable and may be the basis for future PI research.

On the other hand, by comparatively examining different video case discussions, we revealed the PI development reflected in these discussions. It was unique that, through the complex process of entry into the profession, the video discussion process could build a bridge between theory and practice by providing a strong vision and opportunities to feel and think like teachers. In this regard, the power of video cases to make TCs feel better prepared for entering the teaching profession was once again revealed (Bonaccorso, 2020; Borko et al., 2008; Koc et al., 2009).

The second critical finding that draws attention in this study is related to the differences of the indicators in the groups. As a result of this study, differences in the identity indicators reflected in the discussions were determined according to the discussion of their own videos or expert videos as shown in Figure 3.

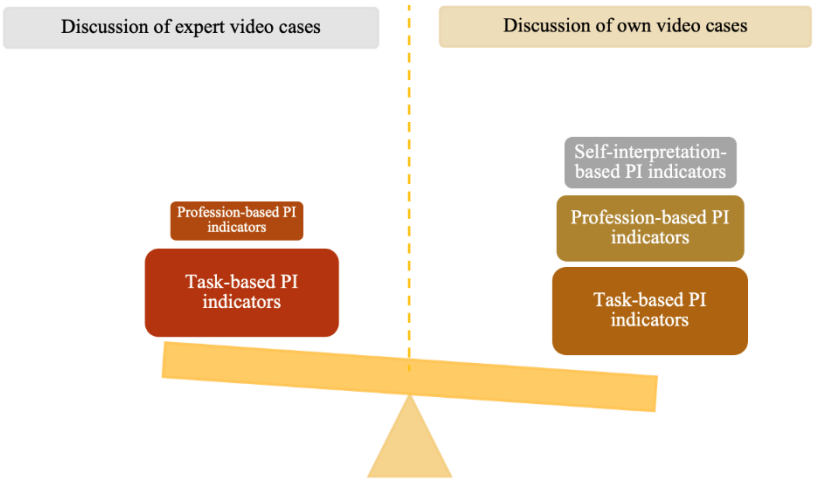

Figure 3. PI indicators reflected in different types of video discussion groups

At first, in both video groups, task-oriented matters such as classroom management issues, communication skills, pedagogical competency, and teacher characteristics were the most common focus of the discussion. This finding was supported by the results of the video case discussions revealing that teachers or TCs mostly discuss dimensions such as classroom management skills and teaching competence (Page & Jones, 2018; Xiao & Tobin, 2018).

However, as can be seen in Figure 3, profession-based and self-interpretation-based dimensions emerged far more in own video case discussions. Surely, there might be many conditions to emerge this difference. One might be

that TCs watching and discussing their in-class experiences had more opportunities for their reflection-on-action by deeply analysing in-class action. Moreover, when discussing their own video cases, they not only analysed a more inclusive reflection of their own in-class teaching but also may have internalized the comments and criticisms; thus, they were able to realize themselves more deeply as teachers. However, since the TCs discussing expert videos could not personally experience the teaching practice, they may not have seen their own development and may not sufficiently support their PI development.

In the literature on teacher education and professional development, it is becoming more common to involve teachers in observing their own instructional videos to encourage reflective practice (e.g., Bonaccorso, 2020; Rosaen et al., 2008; Seidel et al., 2011; Zhang et al., 2011). By watching and discussing with each other, teachers or TCs can empathize with the relevant situation, participate emotionally in the process, and find opportunities to broadly evaluate themselves from different perspectives (Borko et al., 2008). Zhang, Koehler, and Lundeberg (2015) emphasized that "the video of the teachers was a powerful tool used to support teachers' reflection on practice both individually and collaboratively". Moreover, compared with other video types, watching, and discussing own videos has been seen as "like having a mirror placed in my face," prompting critical reflection, immersion, authenticity, motivation, and knowing and recognizing themselves (Gaudin & Chaliès, 2015; Rosaen et al., 2008; Seidel et al., 2011; Zhang et al., 2011).

In parallel, it was underlined that TCs who observed and were confronted with the video cases could participate in the teaching process more emotionally and could better connect their observations with their own practices (Page & Jones, 2018; Sherin, Linsenmeier, & van Es, 2009; Xiao & Tobin, 2018). For instance, Borko, Virmani, Khachatryan and Mangram (2014) revealed that, while discussing their own videos, teachers talked in a more focused, in-depth, and analytic manner about specific issues; thus, teachers' discussions became more "productive". To interpret it from another perspective, the positive evaluations of their next in-class teaching by their peers, who had experienced the same process, may have affected them emotionally and given them self-confidence in performing this profession. With this confidence, they may have reflected more profession-based and self-interpretation-based dimensions of PI in the discussions. In other words, the reason for the development of the particular dimension of PI, which was reflected only in the own video case discussions, may be the positive support and praise of their peers for their own teaching. In the literature, research has shown that evaluating and discussing video cases with peers raises TCs' awareness of their teaching experiences (e.g., Hover, 2020; Sancar & Deryakulu, 2020; Ulusoy & Çakıroğlu, 2020).

We cannot ignore the contribution of watching and discussing expert videos to PI development. For example, Seidel et al. (2011) pointed out that teachers watching videos of others can select key events and analyse them objectively. Similarly, presenting experts' experiences ensures that TCs have several examples at their disposal to support their professional development (e.g., Hatch et al., 2016; Hover, 2020).

Learning how to teach by imitating experts' methods and developing identity construction with solutions by discussing expert videos could be beneficial to the candidates (Perry, Davies, & Brady, 2020). Correspondingly, Borko et al. (2008) discovered that candidates could learn new pedagogical strategies by observing their colleagues in action and could cope with similar situations more easily. However, the debate about the impact of discussing one's own video or those of others on the professional development of teachers is ongoing. For instance, the research conducted by Kleinknecht and Schneider (2013) revealed that the TCs discussed others' videos by analysing them more critically, and, as for discussing their own videos, they remained only in the dimensions of explaining, perceiving, and evaluating the situation. Although our research shows that discussing their own videos has a more positive effect on the development of PI, unfortunately, research on which types of video discussions might have more impact on teachers' professional development is quite limited, indicating that more research is needed on the subject.

Limitations and recommendations

Although these research findings heightened the value of video case discussions on professional development, more information is needed to contribute to teacher education literature. First, with the extended framework about PI, more research could be conducted, and the identity structures of teachers and TCs could be revealed in several fields, contexts, and cultures. Second, it is significant that video cases provide more space to the TCs for being the authors of their own identity as teachers. Thus, future research could focus on the integration of video technology for various periods and on the practices that strengthen TCs' perceptions of their own development. Third, due to the instructional design process that could affect the advantages of the implementation, future research may focus on variables such as discussion structure, support periods, length, video types, moderator effect, and program goal. While planning new research, it should be considered that activities and processes should

support the desired identity development and should not lead to overwhelming, discouraging, or negative emotion. Finally, this study has limitations in that it was conducted on limited TCs and limited discussion cycles. Thus, future research could focus on other areas with more students and a longer process design.

Author (s) Contribution Rate

All authors contributed equally to the concept and design of the study.

Conflicts of Interest

All authors declare no competing interests.

Ethical Approval

Ethical permission (19/12/2016-352) was obtained from Ankara University, Graduate School of Educational Sciences for this research.

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Investigation of the Effect of Teaching with Drama Activities on Students' Achievement in Social Studies Lesson and Permanence of Knowledge

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Investigation of the Effect of Teaching with Drama Activities on Students' Achievement in Social Studies Lesson and Permanence of Knowledge

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Abstract

The purpose of this research is to examine the effect of drama activities on the achievements of primary school fourth grade students in Social Studies Lesson and the permanence of knowledge. For this purpose, exploratory sequential design, one of the mixed research methods, was used. The research was carried out in a primary school affiliated to the Elazig Provincial Directorate of National Education. In order to obtain quantitative data in the research, the "Social Studies Course Achievement Test" was applied to the students. In order to obtain the quantitative data of the research, the pretest-posttest control group design was used. In order to obtain qualitative data, the data for the secondary data source of the exploratory sequential design were obtained by taking the opinions of the experimental group students through a semi-structured interview form as a result of the application. In the research, students' teaching Social Studies Lesson with drama method; As a result of the analyzes made, there was a significant difference in favor of the experimental group in the pre-test and post-test mean scores of the groups in the achievement mean scores of the Social Studies Course. In addition, there was a significant difference in favor of the experimental group in the mean scores of the measurement results for the permanence of the information in the Social Studies Course. However, the results obtained from the qualitative findings also overlap with the quantitative results.

Keywords: Primary school, Social studies lesson, Drama method, Success, Permanence.

Introduction

The attainment of individuals who have started their education life to the point they aim to reach in the education process or the educational institution aims at depends on their success in this process. The realization of success depends on the fact that the information taught to the individual in the process of educational activities becomes permanent in the individual. Because it is impossible to learn a knowledge that has not become permanent. However, knowledge that has become permanent needs to be transformed into consciousness. Just as the prerequisite for the formation of consciousness is the teaching and learning of knowledge, in the same way, for a process to be called education, it is necessary to talk about the transformation of the learned and learned knowledge into consciousness, that is, behavior. Therefore, the individual who has entered an education-teaching process should ensure that the information he learns is successful enough to reach the goals of the educational institution where he is studying, and in the same way, it should have a lasting effect.

The primary school education process has a very important effect on the life of students. It is a fact that there are lessons that affect the life of the student and prepare him for life in this educational process. One of these courses is the Social Studies course. As in all courses, there should be an educational approach that makes the student active in the Social Studies course (Ayvacı, Bakırcı & Başak, 2014; Birgül, 2014). The impact of the educational approach adopted in the educational process on individuals is quite high. The understanding of education, which does not include the individual in education, does not allow him to think, and does not allow him to grow up as a responsible person in his own learning, seems to be difficult to stand in today's global education system (Kahyaoğlu, Yavuzer & Aydede, 2010). Therefore, educational institutions, which are under the important responsibility of ensuring the transfer of cultural heritage from generation to generation, should catch up with today's education understanding and actively involve the individual in the education process (Adıgüzel, 2015). This understanding of education, which will be valid for every lesson in school life, will prepare the individual to make mistakes in one way, and on the other hand, it will enable the individual to take the information and lessons that he will learn in his education life with fun. One of these courses is the Social Studies Course. Social Studies

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Course is one of the most important courses in terms of preparing students for life due to its nature. During this course, teaching methods and techniques that will enable students to participate in the course should be used (Harris, Marcus, McLaren & Fey, 2001). The drama method, which is one of these methods, is a method that makes the student active in the classroom while at the same time enabling the student to learn while having fun (Önder, 2002). Social Studies Course is the source of many goals that students need to reach in their education process. In order to achieve these goals, the concepts in the Social Studies Curriculum must be taught permanently. Successful and permanent teaching of these concepts by structuring them with the help of drama method will facilitate progress towards the goals expected to be achieved in the Social Studies Course (Doğanay, 2003; İbrahimoğlu, 2009).

An education method that activates the individual in the education-teaching process, enables him to think, generates new information based on his previous learning, takes a solution-oriented step in the face of new situations, and puts forward ideas by synthesizing old and new information should be integrated into today's education system. . The drama method, which is one of these methods, puts the individual into a creative process through their own experiences. It is necessary to raise individuals who feel comfortable in the classroom or in all areas of life, who are motivated, evaluate and produce solutions to the new information they will learn, and entertaining methods such as drama should enter the lives of students (Öztürk & Sarı, 2018; Zengin & Ulaş, 2021). Because drama is based on enabling the individual to synthesize information based on their experiences (Üstündağ, 1996). Therefore, it has been seen that the drama method not only enables students to achieve success in many fields, but also makes the information they obtain permanent (Aykaç, 2008; Aylıkçı, 2001; Atar, 2003; Günaydın, 2008; Karataş, 2011; Kartal, 2009; Malbeleği, 2011; Nayci. , 2011; Özer, 2004; Yetim, 2015; Yılmaz, 2013; Zayimoğlu, 2006; Zengin, 2014). In addition, they state that teaching mathematics with drama, which is a method of learning by doing and experiencing, can make mathematics more enjoyable and fun, improve students' attitudes in a positive way, increase their success and socialize them (Aktepe & Bulut, 2014). Drama method is the name of the teaching method that contributes to the formation of cognitive gains in education, supports and realizes the learning of these basic learning areas of children. In this way, students will be able to acquire the target behaviors and knowledge they need to gain in their education process successfully and permanently with the help of drama. The drama method, which increases the confidence and self-esteem of the student, increases the permanence of the acquired knowledge as well as increases the academic success (Bozdoğan, 2003; Avcı Agun, 2012). Therefore, it is thought that the drama method enables children to internalize the education they receive easily and successfully by gamifying education. Especially considering that primary school students are play-age children, it is thought that drama method will play a serious role in students' academic success.

Many scientific studies have been conducted on the drama method, which increases students' motivation for the lesson and develops a positive attitude towards the lesson. However, there are scientific studies in the literature that specifically use drama as a teaching method in Social Studies Course (Başçı & Gündoğdu, 2011; President, 2006; Köroğlu, 2019; Lee, Patall, Cawthon & Steingut 2015; Okandan 2019; Toraman & Ulubey, 2016) . When we look at the studies that have been done, it is seen that drama has a significant effect on the educational life of the individual. It is more important to use classroom student interaction and teaching methods such as drama, where students feel comfortable while learning. In addition, although revealing the success, attitude and motivation of the students as a result of the educational activities carried out with the drama method, it is also important to include the students' views on this process, although it reveals the effectiveness of the drama. Based on this importance, it has been seen as a result of the literature review that there are few studies that reveal both the quantitative and qualitative situations of the students, except for the studies that measure the students' situation in the quantitative dimension. Obtaining the students' views that will reveal the effect of drama method and social studies teaching on their academic success in this course and that these views are in harmony with the findings obtained in the quantitative dimension will further increase the importance of the study. The study, which will be done as a result of this determination, aims to reveal the students' success and the permanence of the knowledge about the Social Studies Course, as well as to reveal the students' views on this process. It is thought that the target results that are thought to be achieved in line with this purpose will make significant contributions to the field. In particular, it is thought that reaching the conclusion that the success of the students who have decreased in their success in the distance education process will be increased through drama activities as a result of this process, and it will also make a serious contribution to the literature.

The Purpose of the Study

The aim of this study was to reveal the effect of teaching with drama on the success of the students in Social Studies Course, to investigate the permanence of the knowledge and to determine the views of the students. To do this, drama activities for the theme of "individual and society" were prepared in a social studies lesson, and

lesson was conducted using these activities. Then, their effect on students' success and permanence of knowledge was examined. For this purpose, answers to the following questions were sought:
1. Is there a significant difference between the pretest and posttest scores of the students after conducting the lesson using drama activities?
2. Is there a significant difference between the mean scores of the experimental and control groups after conducting the lesson using drama activities?
3. Is there a significant difference between the posttest and permanence test mean scores after conducting the lesson using drama activities?
4. What are the students' views on using drama in Social Studies?

Study Group

The population of the study consisted of the 4th grade students studying in a primary school in the city center of Elazig. Two of the 4th grade classes were included in the study. A total of 51 students, 25 girls and 26 boys, participated in the study. The experimental group consisted of 26 students, 12 girls and 14 boys whereas there were a total of 25 students, 13 girls and 12 boys, in the control group. For the study, Ethics Committee Approval was obtained from Atatürk University Social and Human Sciences Research Ethics Committee. In addition, the required permissions were obtained from local authorities.

Since the qualitative data collection tools served to achieve certain goals, non-random sampling technique was used in sample selection. Non-random sampling refers to the convenient selection of the participants to be included in the study in line with the purpose of the research. In this sense, purposive sampling method was used to establish groups. Purposeful sampling, one of the non-random sampling techniques, allows to obtain rich data by adhering to the purpose of the study (Büyüköztürk et al., 2016).

Method

The purpose of a research and the predetermined research questions play a decisive role in the method of the research to be conducted. There are some differences between qualitative and quantitative methods regarding the use of the results and the way these results are obtained (Ocak & Olur 2019). While qualitative research focuses on the personal ideas and comments of the participants about research question, quantitative research aims to reach general comments on the results and tries to make generalization through the results (Büyüköztürk vd., 2015; Clark & Ivanka, 2015; Ocak & Olur, 2019). Mixed research methods, which aim to obtain more valid and reliable results by combining the advantages of qualitative and quantitative research methods in order to benefit from the strengths of both methods, have recently been popular and used in scientific studies (Creswell, 2020).

In order to take advantage of its strengths, mixed research method was adopted in this study. As the quantitative data was used predominantly and the qualitative data were used to support quantitative findings, exploratory sequential design was used. Explanatory sequential design is a mixed method technique used to make broader, more reliable and more valid generalizations by supporting the results which were obtained through quantitative data and supported with qualitative data (Creswell, 2020). In the quantitative part of the study, quasi-experimental design with pretest posttest and control group was used. In the qualitative part, a semi-structured interview form and student diaries were used.

Data Collection Tool

Two data collection tools were used: Social Studies Academic Achievement Test and Semi-Structured Interview Form.

Social Studies Academic Achievement Test: Social Studies Academic Achievement Test used in the study was piloted. An item pool was developed for test before the pilot application. In line with the opinions and suggestions of 5 experts and 5 classroom teachers teaching 4th grade, an item pool was developed and a pilot study was conducted. The pilot application was carried out on 35 students. The students were required to complete a 32-question test in 40 minutes. All of the items in the achievement test were multiple choice. Excel and SPSS programs were used to calculate the difficulty index (.489), item discrimination index (.607) and KR-20 value (.78) of the items. In addition, the achievement test was applied again after a certain period of time to measure retention.

Semi-Structured Interview Form: The semi-structured interview form consists of flexible and open-ended questions, in which there are no pre-determined questions and answers, and ideas reflecting the unique views of

the interviewees are obtained (Merriam, 2013; Ocak, 2019). The interview form was developed by the researchers. First, a preliminary version of the form was developed and expert opinion was obtained. In line with the opinion of 5 experts some questions were removed and the interview form was revised. Then, an additional expert opinion was obtained for the revised form. Finally, a final version of the form was developed.

Validity and Reliability

Some issues that may affect the reliability and validity of the research were tried to be eliminated. In the process of developing data collection tools and measuring the effect of pre-test, post-test and achievement test on permanence, meticulous attention was paid to objective data analysis. In order for objectivity, each student was coded and the scores of each student were recorded directly. In addition, the tests were applied in the classroom to ensure that students could answer the honestly and independently of external factors. Thus, the data loss was also prevented. The raw data collected by the researchers were well-maintained with the intention of they can be analyzed by other researchers and experts. It was tried to reduce the effect of independent variables that may affect the experimental and control groups and reduce the reliability of the applications.

Qualitative research data were collected by the researchers in the natural environment of the participants in order to reduce external factors that may affect the neutrality of the researcher is. The purpose of this measure is to increase the validity and reliability of qualitative data. The accuracy of the qualitative data can be ensured by measures such as field experts and participant confirmation. In this study, expert confirmation was used. In addition, the opinions of colleagues (classroom teachers) were also obtained for the reliability of the study The data obtained from the semi-structured interview form and student diaries were analyzed in line with the purpose of the study. After the qualitative data were analyzed, the data were also analyzed by another researcher. The aim of this was to increase the objectivity of the study by revealing whether the codes determined by the researchers match or not. As a result, 92% agreement was obtained. This finding showed that the reliability and validity of the research was quite high.

Procedure

The experiment was carried out in the first semester of the 2020-2021 academic year, in October and November. The application was made to 4th grade students for 3 hours a week for 5 weeks. The procedure of the study is presented in Table 1.

Table 1. The procedure of the drama activities

Month	Week	Date	Duration	Achievements
October	1.	14 October – 16 October	3 hours	SB.4.1.1. Makes inferences about his/her personal identity by examining official identity document.
October	2.	21 October – 23 October	3 hours	SB.4.1.2. Chronologically lists major life events.
October	3.	28 October – 30 October	3 hours	SB.4.1.3. Recognizes individual interests, needs and abilities.
November	4.	4 November – 6 November	3 hours	SB.4.1.4. Substitutes himself/herself for other individuals with different characteristics.
November	5.	11 November – 13 November	3 hours	SB.4.1.5. Respects the different characteristics of other individuals.

Table 1 shows a five-week program. The months and days in which these activities were held, the duration of each activity and the achievements are indicated. The drama activities applied to the experimental group were prepared in line with the Ministry of National Education (MEB) Curriculum. In addition to the textbook, supplementary books were used to enrich the course content. The lessons were conducted using drama activities designed by the researchers.

Data Analysis

In the quantitative part of the study, SPSS was used to analyze data. As a precondition for the analysis of quantitative data, normality tests were performed for pre- and post-tests. Shapiro-Wilk normality test was performed and central tendency and skewness-kurtosis coefficient values were calculated in order to determine whether the data had a normal distribution. As the number of participants is the study was less than 50, the Shapiro-Wilk test was used. In the literature, it is recommended that the Shapiro-Wilk test should be used to investigate

normality for small groups of less than 50 people (O'Donoghue, 2012; Rovai, Baker & Ponton, 2014). In addition, central tendency and skewness-kurtosis values were also calculated. It is emphasized in the literature that skewness and kurtosis values should be between -2 and +2 values (Tabachnick & Fidell, 2013). On the basis of the criteria mentioned above, it was revealed that the data showed a normal distribution. Since normality was ensured, independent samples t-test was applied for independent samples and dependent groups t-test was applied for dependent samples (Özsoy & Balcı, 2013). In addition, the Social Studies Achievement Test was applied to both the control and experimental groups in order to measure the retention. In retention test, the Cohen's d value of the mean scores and the t-test averages were taken into account. In the literature, both t-test and Cohen's d are used for retentipn test (Yıldırım & Yıldırım, 2011). Generally, it is stated in the literature that if the d value is less than 0.2, the effect is small, if it is 0.5, the effect is medium, and if it is greater than 0.8, the effect is large. However, it should be noted that there may be particular situations where even a d value of 0.2 can have a strong effect (Cohen, 1988; Kılıç, 2014).

In the analysis of qualitative data, content analysis, one of the qualitative data analysis techniques, was used. Different techniques can be used in the analysis of qualitative data. Content analysis was adopted due to the fact that it provides easier analysis of the data and is a method that would enable the measurement tool to reach the purpose it serves. Content analysis enables the qualitative data to be analyzed using codes and to serve the purpose of the study data in an easier and more understandable way (Creswell, 2020; Yıldırım & Şimşek, 2011). Researchers aim to reveal concepts or general statements that are hidden or explicit in the data through content analysis. Therefore, content analysis aims to reach data that is not available from existing data (Gökçe, 2019).

Findings

In this section, the findings of the study are presented in accordance with the research questions. The results are interpreted in the discussion and suggestions section.

Findings on the Effect of Drama Activities on Students' Academic Achievement in Social Studies

The findings regarding the first and second research questions of the study are shown in Table 2.

Table 2. Dependent samples t-test results of the social studies achievement test pre-test and post-test scores of the experimental and control groups

Groups	Tests	N	X	sd	df	t	p
Experimental	Pre	26	54.23	15.85	26	-14.809	.000*
	Post	26	79.04	13.71			
Control	Pre	25	55.00	18.05	25	-6.095	.000*
	Post	25	65.80	15.04			

p<.05

As seen in Table 2, a significant difference was found between pretest-posttest scores of the experimental group in favor of the posttest [t(26) = -14.809; p<.05]. In addition, it was also found that there was a significant difference was found between pretest and posttest scores of the control group in favor of the posttest [t(25)= -6.095; p<.05].

Table 3. Independent samples t-test results of the social studies achievement test pre-test and post-test scores of the experimental and control groups

Tests	Groups	n	X	sd	df	t	p
Pre	Experimental	26	54.23	15.85	51	-.162	.872
	Control	25	55.00	18.05			
Post	Experimental	26	79.04	13.71	51	3.286	.002*
	Control	25	65.80	15.04			

p<.05

Table 3 showed that there was not a significant difference between the experimental and control group in pre-test of the Social Studies Academic Achievement Test [t(51)= -.162; p>.05]. However, a significant difference was found for in post-test in favor of the experimental group [t(51)= 3.286; p<.05].

Findings on the Effect of Drama Activities on Retention in Social Studies Lesson

The findings regarding the third research question of the study are presented in Table 2.

Table 4. Dependent samples t-test results of social studies course retention test pre-test and post-test scores of the experimental and control groups

Tests	Groups	N	X	sd	df	t	p
Pre	Experimental	26	79.04	13.71	25	1.656	.110
	Control	26	77.88	12.26			
Post	Experimental	25	65.80	15.04	24	2.129	*.044
	Control	25	61.60	13.97			

p<.05

Table 4 demonstrated that there was no significant difference between the posttest and retention test scores of the participants in the experimental group [t(25)= 1.656; p>.05]. In addition, the Cohen d value was calculated as 0.089, which indicated a very small effect. Furthermore, there was not a significant difference between the mean scores of the retention test and the posttest. On the other hand, a significant difference was found between the posttest and retention test mean scores of the control group in favor of the posttest [t(24)= 2.129; p<0.05]. In addition, the Cohen d value was calculated as 0.28, which revealed a small effect size. Although the effect was small, the fact that there was a significant difference in the t-test result indicated that teaching methods and techniques used in the education process were not effective.

Qualitative Findings on the Use of Drama in Social Studies

The findings regarding the fourth research question of the study are presented in this section. In order to collect the data, a semi-structured interview form prepared by the researchers about the social studies lesson with drama activities was used.

The Findings on the role of drama in the better understanding of the subject

The findings regarding whether the participants comprehended the subject better through teaching with drama method and their answers are shown in Table 5.

Table 5. The findings regarding whether the participants understand the subject better

Category	Codes	f	%
Positive Opinions	Teaching the subjects with the drama method helped me to understand the subjects better than the previous lessons.	12	46.1
	There was no difference in understanding the subjects better due to my interest in the social studies.	5	19.2
	I did not understand the social studies, but I started to understand the subjects with the drama method.	4	15.3
No Opinion	No opinions were expressed	3	11.5
Negative Opinions	There is no method that will support me to understand social studies	2	7.6

The answers given to the questions in the interview form showed that the students focused on the theme of "success". The answers regarding the students' better understanding of the subject in the classroom through drama activities for the "success" theme were collected under three categories and five different codes. The most emphasized codes were: "*Teaching the subjects with the drama method helped me to understand the subjects better than the previous lessons*", "*There was no difference in understanding the subjects better due to my interest in the social studies*" and "*I did not understand the social studies, but I started to understand the subjects with the drama method*." Some excerpts of the answers are as follows:

> "*I did not listen to the social lesson much before. I think that the topics taught by our teacher are very boring. I am always interested in other things in social class. Our teacher always warns me. But what can I do, I am bored. After you taught the lesson in this way, I started to understand the subjects better. So it attracted my attention and I understood better. Two days ago, without my mother warning me, I started to do social studies homework by myself.*" (S13)
>
> *"I actually do not like social studies that much and I still do not like it. But teaching the lesson with drama increased my interest in the lesson and helped me understand the lesson better." (S1).*

"Social studies is my favorite subject. I am already very interested in the lesson. Therefore, the drama method did not change my interest in the lesson and my understanding did not change because I understood the lesson. But it was very nice to play games in class. Thank you" (S4).
"As you teach the lesson through playing games, I started to understand the lesson better. Because I did not know what empathy was. You taught us. I did not know what chronology was. You taught us this with games" (T26).

The Findings on the role of drama in increasing the success of the participants

Table 6 shows the findings and the answers findings regarding whether the success of the participants' increased through teaching with drama method.

Table 6. The findings regarding whether teaching with drama method increased success

Category	Codes	f	%
Positive Opinions	I think the drama method increased my success	13	50
	The drama method did not make any difference in my high performance	7	26.9
Negative Opinions	The drama method did not make any difference in my low performance.	3	11.5
No Opinion	No opinions were expressed	3	11.5

Semi-structured interviews with the experimental group showed that the participants expressed their opinions on the theme of "success" in the interviews. Table 6 shows that the answers regarding the increase in success through teaching social studies with the drama were grouped under three categories and four different codes. The most highlighted codes were: "*I think the drama method increased my success*", "*The drama method did not make any difference in my high performance*" and "*The drama method did not make any difference in my low performance*". Some of the participants' answers are presented below.

"*After you started teaching the lesson, I started to like the social studies. I find my homework more fun. That's the reason why I am doing better. In social class, I am no longer afraid. I feel comfortable. My success has also increased. Because last week, I started solving a question that I did not know the answer. And I have learned the subjects better and my success has increased because of this*" (S13).
"*Actually, I like the social studies. But it was boring to me. That's why I did not study hard and had bad results. When my teacher asked questions, I could not answer. But now I feel very comfortable. I think I will be more successful now. You are going to give us a test, right? Because I will see if I am successful or not. I think I will be very successful."* (S1).
"*I think my success has increased. Because I started to understand the subjects better. This will probably affect my success*" (S21).
"*I am very successful in my course because I love social studies and work hard. So there was no change in my course. So, I think my success is high again*" (S4).

Results and Discussion

Quantitative data obtained on the effect of drama activities on the success of primary school 4th grade students in the social studies course were analyzed. Accordingly, it affects the success of the students who learn the social studies lesson with the drama method in a positive way. As a result of teaching with drama activities, it can be concluded that the success of the experimental group students was more successful than the control group students, the drama activities had a positive effect on the success of the students, and the teaching with the drama activities increased the success of the students. In addition, qualitative data along with the quantitative data obtained about how drama activities affect the success of students in the social studies course were used as a secondary data source in order to contribute to the research in this respect and to support the quantitative data obtained. For this purpose, the data obtained from the interview form, which was used as a qualitative data source, was analyzed by content analysis. When the question in the interview form about whether drama activities increase success or not, it was concluded that the majority of students (13) thought that drama activities increased their success. Considering the opinions of the students who stated that their success increased, findings supporting the results obtained from the quantitative research data were reached. In addition, the majority of the remaining students (7) emphasized that drama activities increase success. They emphasized that they did not understand whether they affected their success or not because their success in the social studies course was high, but that drama activities motivated them towards the course. In addition, the students (3) who stated that the drama activities did not make

any difference in their low achievement in the social studies course also stated that they found the teaching of the lesson with drama activities enjoyable.

When the literature is examined, there are many studies that show that drama activities affect the success of students in the social studies course and increase their success in this course. When we look at the studies that stated that the success increased as a result of the drama method training; Özcan (2004), Zayimoğlu (2006), Esen (2008), Maden (2010), Malbeleği (2011), Nayci (2011), Akkaya (2012), Saraç (2015), Uygungil (2016) and Aksüt (2016)) studies support the results of this study. Studies showing that the use of drama method in social studies course increases the success of students are not limited to these. Moreover, in a study conducted by Kartal (2009) to reveal whether the use of drama as a teaching method increases the success in social studies course, it has been revealed that the drama method increases success. Similarly; When the studies of Şentürk (2020), Makas (2017), Ütkür (2012) and Aykaç (2008) are examined, they have obtained results showing that the drama method has a positive effect on the success of the students in the social studies course. However, when the literature is examined, there are some studies that do not support these results. However, these studies constitute a very small majority. When Özer (2004) and Yılmaz (2013) looked at the results of their studies, it was concluded that drama activities and teaching did not affect any change in students' success. While the majority of the studies on the drama method in the literature have achieved positive results, it is thought that the fact that these studies have obtained an opposite result is due to the ineffective implementation of drama activities.

When the quantitative and qualitative data obtained from the study were examined, it was concluded that drama activities increased the success of the students. Students' views on the drama activities and the teaching process and the students' views on the process in the diaries they keep after the lesson every week also support this. In addition, when the interview forms and diaries are examined, it is seen that even the students who have a negative perception towards the course and the school begin to have a positive perspective towards the social studies course in particular and the school and other courses in general. They emphasized that this is thanks to drama activities and teaching. It can be said that this is a reason to increase the success of the students in the social studies course. One of the questions of the study, "Is there a significant difference between the permanence scores of the students in the experimental and control groups?" The quantitative data related to the question were examined. When the findings were examined, there was no significant difference between the scores of both the experimental group and the control group students in the permanence test and the scores they received in the post-test. In addition, the permanence test and post-test mean scores of the students in the experimental and control groups were analyzed and as a result of the findings, it was seen that there was a significant difference in the permanence between the groups in favor of the experimental group. The fact that there was no significant difference in the mean scores of the experimental group for the group and that there was a significant difference in favor of the experimental group in the mean scores between the groups can be interpreted that drama activities have an effect on the permanence of the students' knowledge in the social studies course. When the literature is examined, it is seen that there are findings that support this result. Aksüt's (2016) "5. Statistical analyzes carried out in the study in which the effect of drama method on student achievement, attitude and permanence in the classroom social studies lesson was examined revealed that the students in the experimental group had higher retention of knowledge. Again, Saraç (2015) reached a significant difference in favor of the experimental group as a result of the analyzes he conducted to measure the permanence of the information in his study. In addition, there are many studies in the literature that support these data. The results of the studies conducted by Gürel (2004), Sözer (2006) and Esen (2008) also support these findings. As a result of the analyzes made to examine the effect of drama activities on the permanence of the students' knowledge about the social studies course, it was seen that the drama activities had a positive effect on the permanence of the knowledge of the social studies course. It can be interpreted that the use of drama as a method in the social studies course enables the students to learn the information, they have acquired in this course permanently. It has been observed that the studies available in the literature have also reached findings that support this result.

Conclusion

The creative drama method, which provides the cognitive, affective, and behavioral development of the individual, has been used to increase the academic success of the students in different courses and to achieve the course gains. Research results also show that the method is effective in increasing course success. Social Studies (Özer, 2004; Yılmaz, 2013; Zayimoğlu, 2006), Mathematics (Bulut & Aktepe, 2015), Science (Arieli, 2007), Information Technologies (Atalay & Şahin, 2012) and Turkish (Karacil, 2009) courses. It was observed that there was a significant increase in favor of creative drama in the academic achievement of students. In addition, the fact that many studies examining the effect of teaching with the drama method on the permanence of academic knowledge have reached similar results (Atar, 2003; Oğur, 2005; Sözer, 2006; Karapınarlı, 2007; Akdağ, 2010; Subaşı 2012), this method can be used more in educational institutions. reveals the fact that it is necessary to run. Considering

the fact that the aim of the education is a permanent and desired behavioral change in the student, it is seen that the drama method has succeeded very well.

Recommendations

1. Since the use of drama as an educational method in educational activities will provide positive support for the success of the students in their courses, it is recommended to include this method more in the lessons.
2. It has been seen that teaching with the drama method contributes positively to the success, attitude and motivation of the students in their lessons. However, it does not give a definite idea about the level of relationship between drama and these variables. Therefore, it is recommended to conduct regression studies that will reveal the level of relationship between drama and these variables.
3. It is recommended that the drama method, which will enable students to perceive the concepts related to their lessons concretely and facilitate the transition to abstract thinking, should be used more in the education-teaching process.
4. In this research, in which drama is used as a method, the difference between drama and traditional method has been revealed. However, it has been seen in the literature review that there are not many scientific studies that reveal the differences between drama and other teaching methods apart from this method. Therefore, it is recommended to investigate the difference between drama method and different teaching methods in new studies to be conducted.

Author (s) Contribution Rate

The contribution rate of the author, Erdal ZENGİN, is 100% in the study named "Investigation of the Effect of Teaching with Drama Activities on Students' Achievement in Social Studies Lesson and Permanence of Knowledge".

Conflicts of Interest

I declare that there is no potential conflict of interest regarding this work.

Ethical Approval

Ethics Committee Approval dated 21.08.2020 and numbered 11 from Atatürk University Social and Human Sciences Research Ethics Committee and necessary research permissions were obtained for the research.

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The Mediator Role of Academic Grit in The Relationship Between Academic Procrastination and Academic Self-Handicapping in Adolescents

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The Mediator Role of Academic Grit in The Relationship Between Academic Procrastination and Academic Self-Handicapping in Adolescents

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Abstract

This study aims to examine the mediating role of academic grit in the relationship between academic procrastination and academic self-handicapping behaviors of adolescents. In this context, the academic procrastination scale, academic grit scale and academic self-handicapping scale were applied to 512 high school students in Eskişehir. The correlational predictive model, one of the relational models, was used in the study. The study found that academic procrastination was positively correlated with academic self-handicapping and negatively correlated with academic grit. According to the other result obtained from the research, it was found that academic grit had a mediating role in the significant relationship between academic procrastination behaviors and academic self-handicapping behaviors. The results were discussed in light of the relevant literature and suggestions for future studies were presented.

Keywords: Academic procrastination, Academic self-handicapping, Academic grit, Adolescents.

Introduction

When individuals do not fulfill their responsibilities, they may experience tension and show procrastination behavior to get rid of these tension-producing situations (Güneş & Korkut-Owen, 2021). Academic procrastination behavior (APB), one of the types of procrastination, is defined as students' procrastination in academic tasks such as writing term papers and studying for exams (Prohaska, Morrill, Atiles, and Perez, 2000). The APB is not only a lack of work habits or time management but also a complex construct with cognitive, behavioral and affective dimensions (Solomon &Rothblum, 1984). Considering the studies on the factors that cause procrastination, procrastination is related to individuals' lack of skills such as time management, determining their priorities, and working efficiently and effectively, as well as personality traits and faulty cognitive attributions towards themselves and their environment (Balkıs, Duru, Buluş, & Duru, 2006).

When the literature is examined, it is seen that APB is associated with many different variables. APB was found to have negative and significant correlations with academic self-efficacy (Akbay & Gizir, 2010), academic motivation (Demir, 2017), academic success (Balkıs & Duru, 2010; Batool, 2020), time management (Sarıkaya - Aydın & Koçak, 2016), self-esteem (Aydoğan & Özbay, 2012; Senecal, Koestner, & Vallerand, 1995), responsibility towards self and others (Çelikkaleli & Akbay, 2013). On the other hand, APB was found to have positive and significant correlations with fear of failure (Zarrin, Gracia, and Paixão, 2020), hopelessness (Odacı & Kaya, 2019), stress (Eisenbeck, Carreno, & Uclés-Juárez, 2019), test anxiety (Saracaloğlu, Dinçer, and Saygı-Gekerer, 2018), neuroticism (Abood, Gazo, Alharbi, & Mhaidat, 2019). Considering the variables that APB is positively and negatively related to in the relevant literature, these relationships confirm that APB is an undesirable behavior for students. Another variable for which APB has been studied in the literature is academic self-handicapping (Azarbadkan & Ebrahimabad, 2018; Lee & Kim, 2016; Raoof, Ashkzari, & Naghsh, 2019).

In the context of academic learning, students sometimes experience threats to their self-confidence. These threats often appear in fear of failing in an upcoming situation, such as an important test (Schwinger, Wirthwein, Lemmer, & Steinmayr, 2014). Individuals who fail can externalize the source of their failure by attributing the causes of their failure to obstacles (Akça, 2012). In this case, academic self-handicapping behavior (ASHB), which is a specific type of self-handicapping behavior in the literature, may occur. According to Urdan and Midgley (2001) most of the research examining academic self-handicapping shows that academic self-handicapping is primarily

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a self-defeating behavior by students who still care about school but are low achievers and lack confidence in their academic abilities. In the literature, studies examine the relationship between ASHB and APB. Raoof et al. (2019) found a significant and positive relationship between ASHB and APB in their study with high school students. Lee and Kim (2016) found that self-handicapping behavior was a significant predictor of APB. Azarbadkan and Ebrahimabad (2018) found in their study with male high school students that the most important predictor of APB was self-handicapping behavior. Considering the relevant literature, ASHB is also expected to predict APB in this study.

Mediator Role of Academic Grit

Grit was defined as perseverance and passion for long-term goals (Duckworth, Peterson, Matthews, & Kelly, 2007). Grit entails having a dominant superordinate goal and tenaciously working toward it in the face of obstacles and setbacks, often for years or decades (Duckworth and Gross, 2014). Considering the length of academic life in a certain period of human life and the goals desired to be achieved in this process, the importance of the concept of grit in academic life emerges. Clark and Malecki (2019) adapted Duckworth and Quinn's (2009) general definition of grit to the academic field. They made a definition for academic grit as follows: An individual characteristic or skill encompassing determination, resilience, and focus in the pursuit of challenging long-term goals within the domain of education. When the relevant literature was examined, it was found that academic grit was positively related to student's academic success (Clark, Dorio, Eldridge, Malecki, & Demaray, 2020), optimism (Bozgün & Başgül, 2018) and self-efficacy (Alhadabi & Karpinski, 2020), while it was negatively related to stress (Lee, 2017) and test anxiety (Sturman & Zappala-Piemme, 2017).

Another variable negatively associated with academic grit is APB. Wolters and Hussain (2015) found in their study with college students that there was a significant, negative relationship between students' grit and procrastination behavior. In a similar study, Jin, Wang, and Lan (2019) found in their study with undergraduate students that there was a negative and significant relationship between students' grit and APB. At the same time, grit significantly mediated between APB and peer attachment. Regarding this situation, considering the definition of academic grit, academic grit includes focus, determination and resilience in the academic work/task that needs to be done (Clark & Malecki, 2019), while APB includes delaying the academic work/tasks that need to be done (Prohaska et al., 2000). Based on the results of the relevant research and definitions, it is thought that academic grit can also predict APB in this study in a negative and significant way.

Another variable in which academic grit is studied, albeit in small numbers, is ASHB. In the study conducted by Gitter (2008), it was found that there was a significant and negative relationship between ASHB and academic grit. While academic grit includes working with determination in the academic field in the long term despite obstacles (Clark & Malecki, 2019), ASHB includes externalizing failure by putting forward some barriers in the face of failure (Akça, 2012). Çelik and Sarıçam (2018) found in their study that students with academic internal locus of control had higher grit levels than students with an external locus of control. Another study found that external academic locus of control had a positive, moderately significant relationship with ASHB, and external academic control was the most significant predictor of ASHB (Akar, Çelik, & Karataş, 2019). When the characteristics of both concepts and the variables they are related to are considered, it can be said that the concepts contain features opposite features. In this context, it is thought that ASHB can predict academic grit negatively and significantly.

In general, students with academic self-handicapping behavior may increase academic procrastination when they have low academic grit. As mentioned in the related literature above, it can be said that academic grit may play a mediating role between APB and ASHB. In addition, no research has been found in the literature that combines academic grit, APB, and ASHB variables. In this context, the aim of this study is to examine the mediating role of academic grit in the relationship between APB and ASHB in adolescents.

Method

This section includes informations about the research model, sampling, data collection tools and the process.

Research Model

In this research, a correlational predictive model was applied. The study involving the predictive correlational model is used to account for the changes occurring on the dependent variable considering one or more independent variables (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2012). In this research, a correlational

predictive correlational model was implemented to examine the mediating role of academic grit in the relationship between APB and ASHB in adolescents.

Participants

The research participants consist of 512 students attending different types of high schools in Eskişehir province in the fall semester of the 2021-2022 academic year. 310 male and 202 female students have been involved in the research.

Data Collection Instruments

Academic Procrastination Scale (APS): APS was developed by Çakıcı (2003), to measure students' academic procrastination behavior. The scale consists of 19 items in a 5-point Likert type (1 = Does not reflect me at all - 5 = completely reflects me). While a minimum of 19 points can be obtained from the scale, a maximum of 95 can be obtained. As the scores obtained from the scale increase, academic procrastination behavior increases. Later, in the study conducted by Karadaş (2020), a confirmatory factor analysis of the academic procrastination scale was performed and fit values were obtained. The fit values are as follows: $x2$/sd=3.828, IFI=.91, TLI=.90, RMSEA=.053. The Cronbach Alpha reliability coefficient of the scale was .92, and the test-retest correlation coefficient was found as .89 (Çakıcı, 2003). In this study, the Cronbach Alpha internal consistency coefficient was 0.766.

Academic Self-Handicapping Scale (ASHS): ASHS was developed by Urdan and Midgley (2001), and adapted into Turkish by Anlı, Taş, Güneş, Yazgı, and Sevinç (2018). The scale consists of 6 items in a 5-point Likert type (1 = Never - 5 = Always). While a minimum of 6 points can be obtained from the scale, a maximum of 30 can be obtained. As the scores obtained from the scale increase, academic self-handicapping also increases. Confirmatory factor analysis (CFA) results showed that the single factor structure was compatible with the original factor structure ($x2$/sd=1.12, p<.001, CFI=998, NFI=975, RFI=975, IFI=998, TLI=997, GFI=.992, AGFI=.981, RMR=.030, RMSEA=.018). The Cronbach's alpha internal consistency number of the scale was 0.81. In this study, the Cronbach Alpha internal consistency coefficient was found to be 0.776.

Academic Grit Scale (AGS): AGS was developed by Clark and Malecki (2019) and adapted into Turkish by Sağkal, Soylu, Pamukçu, and Özdemir (2020). The scale consists of 10 items in a 5-point Likert type (1= Doesn't suit me at all - 5= Totally suits me). While a minimum of 10 points can be obtained from the scale, a maximum of 50 can be obtained. As the scores obtained from the scale increase, academic grit also increases. CFA results showed that the single factor structure was compatible with the original factor structure ($\chi2$ (35) = 131.624, p < .001, $\chi2$ /sd= 3.76, CFI = .97, TLI = .96, RMSEA = .07 CI [.06] , .09]). The Cronbach Alpha reliability coefficient of the scale was .92, and the test-retest correlation coefficient was 0.90. In this study, the Cronbach Alpha internal consistency coefficient was found to be 0.897.

Data Collection and Analysis

Within the scope of the research, firstly, permission was obtained from the owners of the measurement tools used in the research. In the next step, ethical permission was obtained from the Selcuk University Faculty of Education Ethics Committee (E-16343714-900-127658) Then, permission was obtained from the Eskişehir Directorate of National Education, through the Rectorate of Selçuk University. Then, the high schools in Eskişehir were contacted, and the application was carried out in a virtual environment, considering the pandemic conditions. The research was carried out entirely voluntarily.

After the data were collected and entered into the SPSS program, missing data, wrong data entry, kurtosis, and skewness values were examined before the data were analyzed. First of all, normality assumptions for all models were examined for the data obtained. Mahalanobis distance values were checked for the multivariate normality assumption and 29 data were excluded from the data set because they were outliers. In addition, the kurtosis and skewness coefficients were examined to determine whether the univariate normality assumption was met. It is accepted that the +/- 2 values of kurtosis and skewness are acceptable values for the normal distribution (George & Mallery, 2010). In this study, the kurtosis values for all scales were between 0.045 and .715; the skewness values were between -.011- -.483, and all kurtosis and skewness values were found to be at an acceptable level. Pearson's correlation coefficients and Cronbach's alpha coefficients were calculated from the available data. Finally, Hayes's (2018) Model 4 was used to examine the mediating role of academic grit in the relationship between academic procrastination and academic self-handicapping.

Before the regression analysis, VIF values, Tolerance values (TV) and correlation coefficients between independent variables were calculated for some preconditions. For the regression model, the VIF value was 1-1.031, the TD was 0.970-1, and as seen in Table 1, the correlation between the independent variables was also found to be -0.173. The TV value should be greater than 0.2, the VIF value should be less than 10 (Field, 2005), and the correlation between the independent variables (predictors) should be below .80 (Büyüköztürk, 2010; Field, 2005). It was seen that they took the necessary values before the regression analysis and there was no multicollinearity problem.

Results

This section includes the mean, standard deviation, kurtosis and skewness values of the variables, correlation coefficients between the variables, and mediation analysis results.

Table 1. Mean, standard deviation, kurtosis, skewness, Pearson correlation coefficients for the variables

	M	SD	Skewness	Kurtosis	1.APB	2.AG	3.ASHB
1.APB	54.64	10.2	-.483	.715	1		
2.AG	33,3	7.6	-.011	.045	-,45**	1	
3.ASHB	15.4	4.7	-.056	-.328	,46**	-,173**	1

*p<.01, APB: Academic Procrastination Behaviour AG: Academic Grit ASHB: Academic Self-Handicapping Behaviour

As seen in Table 1, there was a positive, moderately significant relationship between APB and ASHB (r=.46, p<.01), while a negative, moderately significant relationship was found between AP and AG (r=.-.45, p<.01). In addition, a negative, low-level significant relationship was found between AG and ASHB (r=.-.173, p<.01).

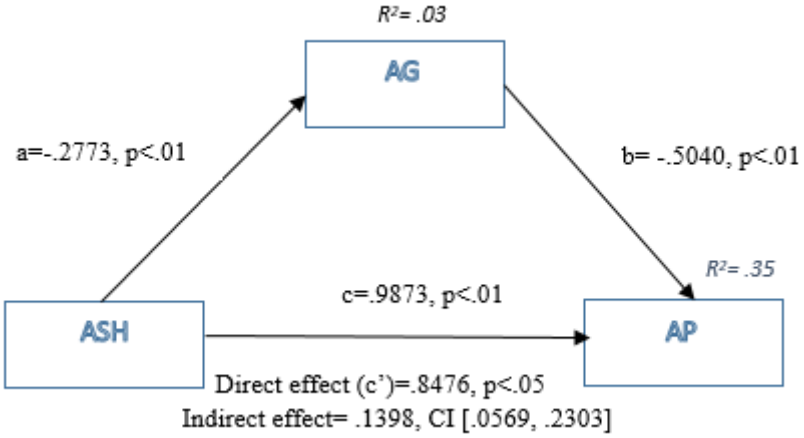
Table 2. Regression analysis results for mediation analysis (N=512)

	Outcome Variables					
	M (AG)			Y (AP)		
Predictive Variables		*b*	S.E.		*b*	S.E.
X (ASH)	a	-.2773***	.0699	c'	.8476	.0770
M (AG)	-	-	-	b	-.5040 ***	.0481
Constant	$İ_M$	37.6067***	1,1277	$İ_y$	58.3738***	2.1836
		R^2=.03			R^2=.35	
		F (1; 510)= 15.7564; p<.001			F (2; 509)= 139.6612 ; p<.001	

*p<.05; **p<.01; ***p<.001, S.e.=Standart error, Non-standardized beta coefficients (b) were reported.

A regression analysis based on the bootstrap method was conducted to test the mediator role of academic grit in the relationship between academic procrastination and academic self-handicapping of adolescents attending high school. Hayes' (2018) model 4 was used for this analysis. In the analysis, 5000 resampling options were preferred with the bootstrap technique. The confidence intervals obtained by the bootstrap technique determined whether academic self-handicapping had an indirect effect on academic procrastination behaviors. The results obtained from the analyzes are given in Table 2 and Figure 1.

According to the results obtained from the analysis, academic self-handicapping was found to negatively and significantly predict academic grit (*b*= -.2773, %95 CI [-.4146, -.1401], t=-3.9694, p<.001). Academic self-handicapping also explained 3% (R^2=.03) of the variation in academic grit. Academic grit was also found to predict academic procrastination negatively and significantly (*b*= -.5040, %95 CI [-.5985, -.4096], t= -10.4833, p<.001). It was seen that the direct effect of academic self-handicapping on academic procrastination was positive and significant (*b*= .8476, %95 CI [.6963, .9989], t= 11,0049, p<.001). Regarding mediation, the indirect effect of academic self-handicapping on academic procrastination was significant; therefore, academic grit was found to mediate the relationship between academic self-handicapping and academic procrastination (*b*= .1398, %95 CI [.0569, .2303]). Academic self-handicapping and academic grit explained 35% (R^2=.35) of the variation in academic procrastination.



Note: Unstandardized values were reported

Discussion

In this study, besides examining the relationship between academic procrastination behaviors and academic self-handicapping behaviors of adolescents attending high schools, it was examined whether academic grit had a mediating role in this relationship. According to the results obtained, it was found that academic grit had a mediating role in the significant relationship between academic procrastination behaviors and academic self-handicapping behaviors.

According to the results obtained in the study, there was a negative and significant relationship between ASHB and AG, and it was also found that ASHB predicted AG negatively and significantly. . In the study of Gitter (2008), which was one of the few studies in the literature to examine the association between ASHB and AG, a significant and negative relationship was identified, similar to the results of the present study. When the study's findings and the relevant literature are reviewed together, it can be concluded that ASHB is an impediment to the establishment of AG, which is an essential factor for students to take academic action. Another explanation for this situation is that individuals can focus on this situation cognitively due to the attempts to find a convincing causal explanation for the failures of individuals mentioned by Arkin and Baumgardner (1985). When this perspective is considered in the context of students, efforts to find excuses for students' failures instead of being determined to compensate for their failures may negatively affect students' academic grit.

According to the results obtained in the study, besides the significant negative relationship between AG and APB, it was also found that AG significantly predicted APB. Jin et al. (2019) found that AG predicted APB negatively and significantly in their study with Chinese university students. Another study conducted with nursing students in Egypt found that AG predicted APB negatively and significantly (Attia and Abdelwahid, 2020). Similarly, in the study conducted by Jeong (2020) with undergraduate students, it was found that AG predicted APB negatively and significantly. It is seen that the results of the studies in the literature related to the current study are similar. When the relevant literature and the results of the current study are considered together, it can be interpreted that adolescents' low level of grit while performing their academic work causes adolescents to disrupt their academic responsibilities.

According to the results obtained in the study, besides a significant positive relationship between ASHB and APB, it was found that AG had a mediating role in this significant relationship between ASHB and APB. According to these results, it can be stated that the ASHB of adolescents has a direct and significant effect on APB, and ASHB also has a significant indirect effect on APB through AG. There are studies in the literature showing that there are similar relationships. Jia, Wang, Xu, Lin, Zhang, and Jiang (2021) found a moderate, positive and significant relationship between ASHB and APB in their study with medical students. Beck, Koons, and Milgrim (2000) found a moderate, positive relationship between self-handicapping behavior and APB in their study with university students. Barutçu-Yıldırım and Demir (2020) found a moderate, positive relationship between self-handicapping behaviours and APB in their study with university students. In addition, there are studies examining the relationship between AG, the mediating variable of the research (Attia & Abdelwahid, 2020; Jeong, 2020; Jin et al. 2019), and the dependent variable, as well as studies examining the relationship between AG and the independent variable (Gitter, 2008). No study has been found in the literature that examines all three variables simultaneously or that examines AG as a mediator variable in the relationship between APD and ASHB. In this

context, it is thought that the results of this study can contribute to the literature. Taking into account the direct and indirect effects of the current study, it can be stated that as the ASHB of adolescents increases, their APB also increases directly, and as their ASHB increases, their AG decreases. It can be said that ASHB indirectly increases APB through its negative effect on AG. Regarding this situation, in this study, it was seen that ASHB has a role in academic procrastination behaviors, which are accepted as an important risk factor for adolescents' academic success. In addition to this role of ASHB, it can be said that ASHB is a risk factor for the emergence of AG, which has a supportive role in adolescents' academic success. In addition to the role of adolescents' ASHB on AP, it can be said that ASHB also indirectly plays a role in adolescents' postponement of their academic work by reducing their AG, which has an important role in starting and continuing their academic work.

Conclusion

In general, it was observed that ASHB had significant role in academic grit, which has an important place in starting and maintaining their academic work and in procrastination behaviors of adolescents attending high school while performing their academic career. Considering that ASHB increases adolescents' APB behaviors and decreases their AG, it can be said that ASHB is an significant risk factor for adolescents to fulfill and maintain their academic work. On the other hand, it can be said that AG has a supportive role in fulfilling academic tasks such as exams, homework, and study, as AG predicted APB negatively and significantly and had a negative and significant relationship with ASHB.

Recommendations

Taking into account the above results and the research, ASHB and APB behaviors, which make it hard for teens to do their schoolwork, can be reduced through individual or group counseling. In addition, it may be beneficial to include academic grit in the program while preparing psychoeducational studies on the reduction of ASHB and APB. Since this research is a quantitative study, cognitive risk factors and preventive factors underlying academic procrastination behaviors of adolescents can be examined in depth with qualitative studies in future studies. In the study, it was seen that the literature on academic grit and academic self-handicapping variables was less than the academic procrastination literature. In this context, in future studies, researchers can study the concepts of academic grit and self-handicapping with academic variables such as academic success, school adjustment, school burnout, dropout, as well as personality, family, and friends and technology use. In future studies, the variables in this research can be studied according to the grade level and the different types of high schools. Because the participants are from a single province, future studies with a broader participation can be conducted by including different provinces of Turkey. These findings are significant for parents, educators, school counselors, and policymakers alike.

Author (s) Contribution Rate

The article was written by a single author

Conflicts of Interest

The author declared there is no conflict of interest.

Ethical Approval

Ethical permission (E-16343714-900-127658) was obtained from Selcuk University Faculty of Education Ethics Committee for this research.

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Investigation of School 'Administrators' Assumptions Regarding Management Practices Based on X-Y Theory

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Investigation of School 'Administrators' Assumptions Regarding Management Practices Based on X-Y Theory*

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Abstract

The main goal of this research is to develop a measurement tool that will determine the beliefs that guide school administrators' practices based on X and Y theory and the relationships between of level of these beliefs and other variables that school administrators use in management practices. The theory was tested with the scale developed in the research. Furthermore, the levels of school administrators' beliefs, which are assumed to guide their practices based on X and Y theory, were revealed in the research using data obtained during the scale development study; it was determined whether the demographic variables of school administrators differed according to the subscale (X and Y subscale) scores. Relational and causal comparison strategies were used in this quantitatively constructed investigation. Research data were collected from three sample groups in the Erzurum sample. It has been determined that there is a significant difference in the X theory subscale score in favour of school administrators working in primary schools. The study concluded that, based on X-Y theory, the assumptions of school administrators that shape management practices could be determined by the School Administrators' Beliefs in the Nature of Human Scale.

Keywords: 'McGregor's theory, Classical management theories, Human relations approach, X-Y theories, Belief in human nature

Introduction

Human resources are a school's most valuable asset. The question of how to manage the existing human resources to achieve the school's goals is one of the ancient questions of management science. Because when the history of organizations is examined, it is seen that human beings as social beings constantly gain new meanings, identities, goals, roles, and skills. Therefore, management science has developed new perspectives on the human problem in every period. Accordingly, while the science of management examined people based on work, organization, and processes in some periods, in other periods, needs, relations, systems, environment, technology, etc. analyzed on the basis. As a result, management science is constantly reviewing and examining the answers to the question of how to manage human resources.Some facts stay unchanged even while the content of the answer to the question is continually changing and evolving. One of them is the fact that the assumptions of the rulers towards the ruled direct the management practices.

Seeing this fact, Douglas McGregor researched how to make the most of human resources. McGregor (1970) argued that the human aspect of the organization is a single whole and that the existing theoretical assumptions about the supervision of human resources in organizations determine the entire character of the organization. At this point, he stated that the question will be asked top managers, '"What are your assumptions (implicit or explicitly express) about managing people most effectively"?", would give clues. According to McGregor (1970), behind any managerial decision or action lie surprisingly common assumptions about the nature and behaviour of people. Assumptions about human resource management control indicate an organization's character (Daneshfard, & Rad, 2020). In that case, knowing what assumptions school administrators have about human nature, which will accelerate the construction process of the schools desired by today's information society, can facilitate the processes of raising, selecting, employing, and retaining administrators.

In this context, X and Y theory has inspired many managerial and organizational behaviour and leadership theories. Despite the importance, it has been overlooked that the theory reflects basic individual differences in attitudes that guide leadership behaviours. This theory is often limited as a special management practice examined at the organizational level. Despite its impact and potential utility, few studies test the validity of this theory

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(Kopelman, Prottas, & Falk, 2009, Pine, 2018). Based on McGregor's X and Y theory, some attempts have been made in different countries to make some measurements in organizations (Miles, 1964; Neuliep, 1987; Jones and Pfeiffer, 1972; Fiman, 1973; Michaelsen, 1973; Spautz, 1975; Teleometrics International Inc., 1995; Neuliep 1996). After that, Kopelman, Prottas, and Davis (2008) developed a four-item measurement tool based on this theory. Finally, Kopelman, Prottas, and Falk (2009; 2012) developed attitude and behaviour scales since previous measuring attempts lacked sufficient data on validity and reliability and were only used for commercial purposes. It has been observed that the developed scale has been used in some studies (Gürbüz, Şahin, Köksal, 2014; Sullivan, 2017; Pine, 2018). These studies assume that the assumptions on which theory X is based are the exact opposite of theory Y. For example, X theory items were reversed from items created using the X and Y theory assumptions, and a single score type (Y theory score) was created. The total score of the scale or the mean of the scale are the values that make it easy to judge the items that test a similar hypothesis. On the other hand, calculating the mean or total score of the scale items containing independent, opposite, or different hypotheses may lead to misinterpretation of the findings. This may make the findings obtained with these scales controversial. Thus, according to McGregor (1970), the basic organizational principles derived from the X theory (managing and controlling through the use of authority) and the basic organizational principles derived from the Y theory (creating conditions that allow employees to achieve their goals by directing their efforts toward the organizati on's success) have many different meanings in terms of human resource management. Assuming theory Y to be the exact opposite of theory X can lead to simplification and misunderstanding of theories.

For example, according to McGregor (1970), if employees are lazy and apathetic, avoid cooperating, are unwilling to take responsibility, and are incompatible, theory Y states that the reasons for this lie in managers' organization methods and supervision. Theory Y emphasizes the conditions created by the manager, not the nature of the human being. According to this viewpoint, management's role is to direct and organize human and substance resources so that a business achieves its goals. It is the management's responsibility to provide opportunities for the development of employees, to release their potential by creating conditions where people can use their efforts to achieve organizational goals (Gannon & Boguszak, 2013). This does not make the two theories opposed, but instead differentiates them. In this context, the theoretical structure of the X and Y theories on which the scale developed within the scope of the research is based has been examined with this understanding. Furthermore, it was seen that the scales developed in the literature were directed toward attitudes and behaviours rather than directly addressing the administrators' beliefs about the X and Y theory assumptions.

When the studies conducted in Turkey are examined, there is a study conducted by Aydın (2012) to reveal the research performance of academicians based on the X, Y, and Z theories. However, there was not enough information about the validity and reliability of the measurement tool in the study. The Management Approaches Scale developed by Usta (2017) was developed for the best management problematic based on a chaotic and positivist management approach. Considering the focus of the current research, it can be said that it has quite a different approach from this research. The scale developed by Tanrıöğen (2018) based on the X and Y theory to determine the management philosophies of school principals according to teacher perception (as cited in Ayral, 2020) is far from revealing beliefs about human nature based on school principals' perceptions. However, the comments made by teachers in determining the administrators' human-oriented presumptions may cause illusions. Instead, it is thought that administrators' self-reports of their beliefs will yield more accurate results. In Sabancı's (2008) quantitative study on the beliefs of school administrators in Turkey about human nature, sufficient evidence could not be found regarding the validity studies of the scale used.

In Turkey, the lack of a scale developed to determine school principals' opinions about human nature based on the X and Y theory limits the studies that can be done on the issue, the contributions to the theory and the benefit from the theory. Furthermore, the lack of sufficient information about the validity and reliability of some measurement tools in studies conducted in other countries, the measurement of both theories by transforming them into a single score type in some studies, and the fact that the scales developed in these studies do not reveal data on X and Y belief levels have been identified as a literature problem. Today, however, the response to the question of what the administrators' presumptions about people can help clarify various problems with school life, school psychology, management procedures, organizational behavior, and leadership. For this reason, there is a need for a more reliable and valid alternative measurement tool that can provide a solution to this problem. In answer to this need, this study aims to develop a measurement tool that will reveal the belief levels of school administrators about human nature, by the theory whose assumptions have been stated above. Knowing the beliefs and attitudes about people in advance is considered important in predicting the behaviours that will emerge and correcting unwanted behaviours (Çöllü & Öztürk, 2006). The scale established in this context is regarded as beneficial in forecasting administrator conduct toward the school community and rectifying undesired administrator actions.

As stated above, due to the limited number of research, it is unknown to what extent school administrators' beliefs about human nature, which are claimed to guide management activities, are in Turkey. Revealing the belief levels of school administrators about human nature based on the X and Y theory will prepare a suitable ground for understanding and transforming management approaches. For this reason, determining the level of belief of school administrators towards human nature is the second aim of this study.

According to McGregor's X and Y theory, managers' assumptions about human nature tend to be self-actualizing, and the assumptions of these two theories are opposite to each other (Kopelman, Prottas, & Falk, 2009). According to Sabuncuoğlu and Tüz (2016), the Y theory developed by McGregor defines the human being as the opposite of the X theory, prone to acquire responsible and mature behaviours. As stated in many studies, is theory Y the opposite of theory X? The answers to this question will contribute to a better understanding of these theories. Based on such a requirement, as the third aim of this study, the hypothesis that the scores obtained from the two subscales developed separately based on the X and Y theory have a strong inverse relationship was tested.

In Turkey, no statistical data has been discovered that assesses school administrators' perceptions based on demographic variables such as gender, age, seniority, duty type, and school type, using a belief scale to the nature of people based on the X and Y theory. It is thought that revealing the findings on the subject will make important contributions to the relevant literature. The final aim of this study is to reveal whether the scores of school administrators from the belief scale about the nature of people differ according to the demographic variables expressed.

The research aims to develop a scale based on X and Y theories in the sample of school administrators, to determine the possible relationship between the belief levels of school administrators based on the two theories by determining their belief levels in human nature. It also reveals whether these beliefs differ according to some demographic variables. For this purpose, answers to the following questions were sought;

1. Can scientific evidence be presented for the construct validity and reliability of a measurement tool based on X and Y theory in the sample of school administrators?
2. What is the level of school administrators' beliefs based on the X and Y theory?
3. Is there a statistically significant relationship between the scores obtained from the subscales developed for each theory in a measurement tool developed based on X and Y theories in the sample of school administrators? What is the direction and level of the possible relationship?
4. Do school administrators' beliefs about human nature differ in a statistically significant way according to their demographic variables?

Method

Research Model

The quantitative research method was used in the realization of this study. The study used relational and causal-comparative research designs to develop the scale and to reveal whether the obtained scores differ according to demographic variables. The likert type scale development method was used in this study. In the development of the scale, Rensis Likert's (1932) "scaling with rating sums" model (Tezbaşaran, 2008), which is claimed to be more economical than other approaches, was preferred. In the relational design, the relationships between two or more variables and the degree of these relationships are revealed. The degree of the relationship emerging in this design and whether the variables predict each other are determined (Creswell, 2012). Correlation determines the direction and size of the linear relationship between two variables (Tabachnick & Fidell, 2015). The causal-comparative design is a research approach that tries to explain the differences in the experiences of the groups by examining them. This design, as in experimental research, tries to understand whether some independent variables make a difference in the dependent variable by comparing the groups. Unlike the experimental design, the independent variable has already emerged, or it is unethical to manipulate the independent variable (Lodico, Spaulding & Voegtle, 2006; Gay, Mills & Airasian, 2016).

Selection of the Sample

A simple random sampling method was used in sample selection. The research data were collected through the online communication network created by the national education directorates. Volunteering criterion was used in the selection of the participants. The research participant group consists of school administrators (school principal, chief assistant of school principal, assistant principal) working in Erzurum. Several studies were carried out gradually with two different participant groups in this context. The main application of the scale development was

carried out with the first participant group. The scale developed with the second participant group was tested by confirmatory factor analysis. Finally, with the data of the third participant group consisting of the participants of both groups, it was determined whether the X and Y theory scores differed according to the demographic variables of the school administrators.

Table 1. Demographic information of the participants

Specification	1. Group (n)	2. Group (n)	3. Group (n)
Gender	190	121	311
Woman	35	23	58
Man	155	98	253
Task Type			
School principal	110	84	194
Chief assistant of the school principal	5	5	10
Assistant of the school principal	75	32	107
Educational Status			
Associate Degree	2	-	2
'Bachelor's Degree	165	108	273
MSc	23	13	36
PhD	-	-	-
Age			
20-30	29	60	89
31-40	55	39	94
41-50	56	18	74
51-60	41	3	44
61 +	9	1	10
MoNE Seniority			
1-5	22	58	80
6-10	33	35	68
11-15	32	11	43
16-20	25	6	31
21+	78	11	89
School Principal Seniority			
1-5	84	91	175
6-10	43	22	65
11-15	21	2	23
16-20	17	6	23
21+	25	-	25
School Type			
Pre-school	22	3	25
Primary school	67	46	113
Secondary school	47	49	96
High school	54	23	77

When Table 1 is examined, it is seen that there is some information about each participant group regarding gender, task type, educational status, age range, and the type of school where they work. The scale, which was applied voluntarily, was opened to the access of school administrators working in the public sector, and the scales answered in the context of the scale's suitability for factor analysis were accepted as samples. When the distribution of the answered scales to the districts is examined, the 1st participant group consists of 190 school administrators working in the central districts of Erzurum, Palandöken (26.3%), Aziziye (32.6%) and Yakutiye (41.1%). The second participant group comprises 121 school administrators working in other districts (52.1% Tekman, 22.3% Pasinler, 16.5% Tortum, and 9.1% other districts) except for the central districts of Erzurum. 3. The participant group consists of a combination of both groups (311 school administrators).

Data Collection Tools

The data collection tool used in the research was developed in the current study. The first part of the data collection tool, which consists of two parts, was prepared to reach the demographic information of school administrators. The second part was prepared to reveal the belief levels about human nature based on the X and Y theory. The scale was developed in a 5-point Likert-type scale, with Strongly Agree (5 / 4.20-5.00), Agree (4 / 3.40-4.19), Undecided (3 / 2.60-3.39), Disagree (2 / 1.80-2.59), Strongly Disagree (1 / 1.00-1.79) options are available.
To reveal the perceptions of school administrators, all stages of the development of the belief scale for human nature and the results of the psychometric measurement of the measurement tool are expressed under the heading of findings. Research data were collected electronically in 2 months due to the pandemic. The data collection tool was applied with the permission of Atatürk University Institute of Educational Sciences, Ethics Committee of Educational Sciences, dated 26/11/2020. Written explanations were given to the participants about the purpose of the research, voluntary participation, and the use of data for scientific purposes only. The administrators, who approved the voluntary participation, filled out the data collection tool, which was structured anonymously, and electronically.

Data Analysis

The data obtained from the school administrators were first examined in terms of missing values, minimum and maximum values, and extreme values. As a result of the examination, it was understood that there was no missing data, the minimum and maximum scores were in the range of 1-5 points, and the Z scores ranged between -3 and +3. For item discrimination coefficients, item scale score correlation and item analysis based on the difference between lower and upper group averages were performed. Empirical evidence was tried to be presented by applying EFA and CFA for the scale's construct validity. AVE (Average variance extracted) coefficients were calculated to reveal the similarity between the items, and CR (Composite/construct reliability) coefficients were calculated to reveal the combined validity of the factors. 'Cronbach's alpha coefficient was used to analyze the internal consistency coefficient of the scale. Skewness and Kurtosis values were calculated by performing Kolmogorov-Smirnov and Shapiro-Wilk Analyzes to provide evidence regarding the distribution characteristics of the scale. T-Test and One-Way Analysis of Variance were used to determine whether school administrators' beliefs about human nature differ according to demographic variables. Pearson Correlation Analysis was performed to reveal the relationship between the scale sub-factors.

Findings

In this section, there are scale development processes, exploratory and confirmatory factor analyses, parametric test results based on scale data whose validity and the sub-problems of the research have tested reliability.

Research Findings on the Development of the Belief Scale for Human Nature

The findings regarding the stages and processes followed in the scale development process are expressed in this section.

Creating an item pool and pre-implementing

For the scale designed to be developed, a literature review was conducted, and the theoretical foundations of the scale were determined. The literature review examined measurement tools developed based on X and Y theory in Turkey and other countries. Due to the limited number of domestic studies on the creation of the item pool, the book "The Human Relations Aspect of the Organization" by McGregor (1970), the representative of the X and Y theory, was used. Also, the scales developed abroad were used (Miles, 1964; Fiman, 1973; Michaelsen, 1973; Spautz, 1975; Teleometrics International Inc, 1995; Kopelman, Prottas, & Davis, 2008; Kopelman, Prottas, & Falk, 2009; Kopelman, Prottas & Falk, 2012). While creating the item pool, the following assumptions of Mcgregor were used. These assumptions are expressed under the headings of theories X and Y:

Theory X: Traditional Management and Audit View

1. *The average human being has an inherent dislike of work and will avoid it if he can.*
2. *Because of this human characteristic of dislike of work, most people must be coerced, controlled, directed, threatened with punishment to get them to put forth adequate effort towards the achievement of organizational objectives.*

3. The average human being prefers to be directed, wishes to avoid responsibility, has relatively little ambition, and wants security above all.

Assumptions of Theory Y

1. The expenditure of physical and mental effort and work is as natural as play or rest.
2. External control and the threat of punishment are not the only means of bringing about effort toward organizational objectives. Man will exercise self-direction and self-control in the service of objectives to which he is committed.
3. Commitment to objectives is a function of the rewards associated with their achievement.
4. The average human being learns, under proper conditions, not only to accept but to seek responsibility
5. The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in solving organizational problems is wide, not narrowly, distributed in the population.
6. Under the conditions of modern industrial life, the intellectual potentials of the average human being and only partially utilized.

The created item pool was delivered to three experts in the field of educational administration, and their evaluations were taken in line with the content validity and purpose of the research. The scale, of which necessary corrections were made in line with expert opinions, was applied to a group of 10 managers. Taking into account the problems discovered during the application, response time, and incomprehensible elements, the trial application scale was modified as required.Afterward, the main application of the draft scale consisting of 29 items was carried out on a school administrator group consisting of 190 people. First, the item scale score correlations were examined, and the discrimination coefficients of the scale items were determined. M2., M3., M6., M7., M10., M11., M12., M13., M14., M17., M19., M21., M25., M26., whose item discrimination coefficient is less than 0.4, M29. Factor analysis was performed by removing items from the scale.

Main Scale Application and Exploratory Factor Analysis Results

First, the Kaiser-Meyer-Olkin Sample Adequacy Measurement (KMO value) was found to be 0.819 in the analysis applied to a sample group of 190 people to reveal whether the data structure was suitable for the factor analysis. This value shows that the obtained data matrix is suitable for factor analysis and factor creation (Büyüköztürk, 2011). When the results obtained from the Barlett analysis are examined, it is seen that the chi-square value is significant at the 0.01 significance level. It was understood that this result met the multivariate normality assumption of the research data (Cokluk, Şekercioğlu & Büyüköztürk, 2012; Seçer, 2013). In this case, factor analysis was continued.

After the exploratory factor analysis by applying the varimax rotation technique, a three-factor structure proposal was reached with eigenvalues of 3.932, 2.082, and 1.129. Since the factors are thought to be independent of each other, the varimax rotation technique was preferred (DeVellis, 2017). When the rotated factor loads were examined, it was seen that the factor loads of all items, except M28, were gathered in two-factor structures as predicted by the theoretical basis. The factor load of the item M28 was .090, in the first factor, .198 in the second factor, and .763 in the third factor, which consisted of a single item. Considering that the load value in the first two factors was very low and the third factor consisted of only one item, it was decided to exclude this item from the exploratory factor analysis. Finally, the EFA findings regarding the 13-item two-factor structure are presented below:

Table 2 shows the rates of explaining the variance of the items in the common factor together. The 9th item was the lowest to explain the common variance with 35%; Item 11, on the other hand, has the highest rate of explaining the common variance with 60%. It is seen that the common variances of the items explained by the factors are greater than 0.10 (Cokluk, Şekercioğlu, Büyüköztürk, 2012). When Table 2 is examined, it is seen that the factor load values of the scale items are between 0.579 and 0.714. There is widespread acceptance in the literature that item factor loads should be higher than 0.30 (Şencan, 2005; Tavşancıl, 2006). The contribution of the two suggested factors to the variance is 45,604%. The contribution of each factor to the total variance is important in deciding the number of factors (Cokluk, Şekercioğlu & Büyüköztürk, 2012). The contribution of the first factor, which was developed based on the X theory, to the total variance was 30.13%; The contribution of the second factor, developed based on the Y theory, to the variance is 15.47%. The total explained variance of the scale is 45.604%. In the literature, it is accepted that the explained variances of the scales developed in the social sciences are between 40% and 60% (Scherer et al., 1988; cited in Tavşancıl, 2006).

Table 2. Results of exploratory factor analysis

Theory X Subscale Items	Common Variance	Factor Loads
1. Most employees strive towards organizational goals through external monitoring and threats (X, Assumption 2).	.380	.607
2. Most employees avoid taking responsibility (X, Assumption 3).	.478	.691
4. Most employees are lazy; they don't want to work (X, Assumption 1).	.494	.579
6. Employees need external control and pressure to work towards organizational goals (X, Assumption 2).	.529	.609
8. Most employees have lack of ambition (X, Assumption 3).	.407	.638
10. Most employees have a natural tendency for being managed rather than managing (X, Assumption 3).	.370	.591
11. Most employees will get away from work if they can find a way (X, Assumption 1).	.601	.714
Theory Y Subscale Items		
3. Employees who are devoted to the organization's mission manage and regulate themselves in the workplace (Y, Assumption 2).	.446	.653
5. If the conditions are right, employees will be willing to accept responsibility in the organization (Y, Assumption 4)	.474	.684
7. Imagination, which is common among employees, can be utilized in solving organizational problems (Y, Assumption 5).	.481	.684
9. In organizations, 'people's talents can be utilized much more (Y, Assumption 6).	.345	.583
12. Employees commit to organizational goals that respond to self-actualization needs (Y, Assumption 3)	.447	.667
13. Work is not something that most employees are born hating (Y, Assumption 1).	.476	.654
Theory X Eigenvalue 3.917	Explained Variance	30.13
Theory Y Eigenvalue 2.011	Explained Variance	15.47
Total Variance Explained		45.604

Finally, the Scree Plot was examined to decide on the factor number of the scale.

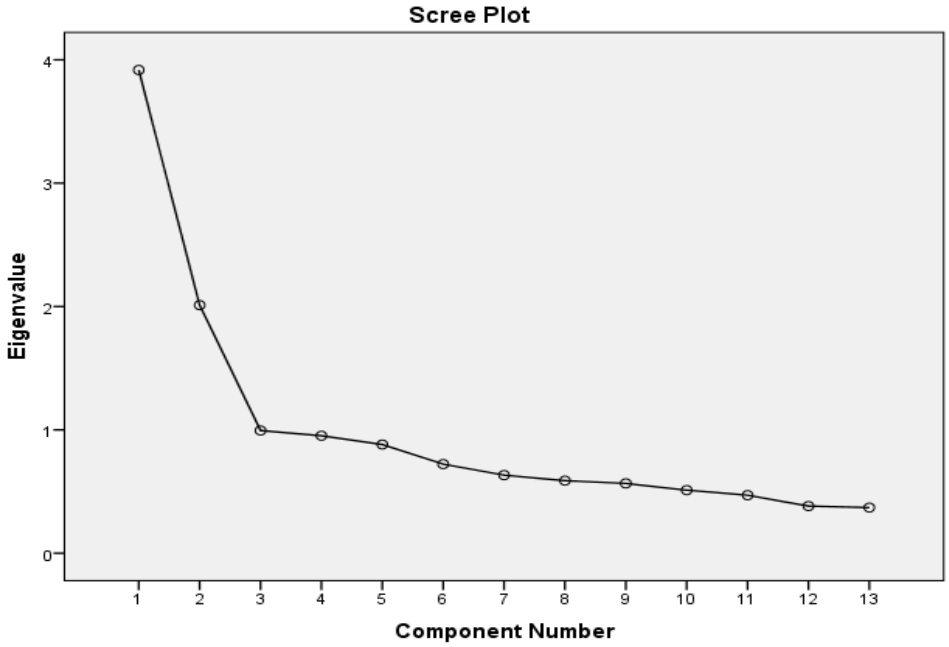

Figure 1. Scree Plot graph after EFA

When Figure 1 is examined, the components descending vertically from the y-axis to the x-axis form a horizontal line after the third point and continue by a plateau. The contribution of the components after the third point to the common variance is low and very close to each other. Based on these findings, it can be stated that the factor number of the scale is two. The factors were named Theory X Subscale and Theory Y Subscale. 1.,2.,4.,6.,8.,10.,11. Items X theory, 3.,5.,7.,9.,12.,13. The items are included in the Theory Y subscale.

Confirmatory Factor Analysis Results

The developed 13-item scale was applied to the second sample group, and the normal distribution of the obtained data was examined before the confirmatory factor analysis. Table 3 shows the normal distribution test results of the scale data of each sample group.

Table 3. Findings regarding the conformity of the X and Y theory-based subscale data to the normal distribution curve

Gr.	Sub-scale	Kolmogorov-Smirnov			Shapiro-Wilk			Skewness	Kurtosis
		Stat.	df	p	Stat.	df	p		
1.	X	.087	190	.001	.991	190	.267	-.131	-.089
	Y	.093	190	.000	.968	190	.000	-.103	-.594
2.	X	.084	121	.035	.983	121	.119	.167	-.546
	Y	.104	121	.003	.966	121	.004	-.319	-.437
3.	X	.057	311	.016	.992	311	.097	.024	-.268
	Y	.082	311	.000	.974	311	.000	-.229	-.445

When Table 3 is examined, it is seen that the X Theory data distribution in all group applications fully meets the normality assumption only in the Shapiro-Wilk analysis. On the other hand, it is not sufficient to look at the result of this test to decide whether the distribution is close to normal (Seçer, 2013). For this reason, the findings regarding the skewness and kurtosis values of the variables were also examined. It is seen that Skewness and Kurtosis values are between -1,+1 values in all applications seen in the table. According to Büyüköztürk (2011) and Çokluk, Şekercioğlu, and Büyüköztürk (2012), the fact that the skewness and kurtosis coefficient remain within the limits of -1,+1 indicates that the distribution does not deviate excessively from the normal.

Confirmatory Factor Analysis (CFA) was applied to test the construct validity of the data whose normal distribution was tested. The results of the CFA analysis for the two-factor model are shown in Figure 2.

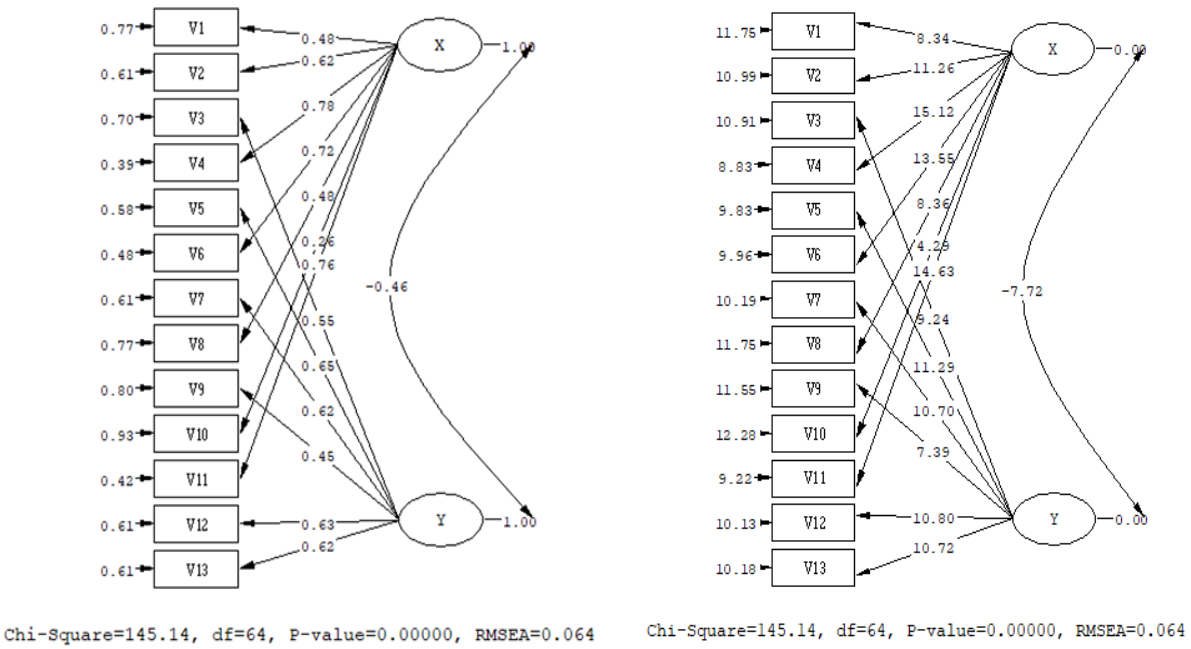

Figure 2. T-value and factor loads obtained as a result of CFA for the two-factor model

Table 4 shows the CFA findings of the scale data of each participant group.

Table 4. Findings concerning the CFA applied to the belief in human nature scale

	N	Sb	AGFI	GFI	NNFI	CFI	SRMR	RMSEA	X^2/df	G/Sb	AVE	CR
1.G*	190	XY	0.85	0.90	0.91	0.93	0.078	0.080	2.20	1.G/X	0.338	0.773
2.G*	121	XY	0.84	0.89	0.94	0.95	0.088	0.067	1.53	2.G/X	0.442	0.830
3.G*	311	XY	0.90	0.93	0.94	0.95	0.065	0.064	2.26	3.G/X	0.374	0.793
G= Group, Sb: Subscale, AVE: Average Variance Extracted,										1.G/Y	0.369	0.801
CR: Composite/construct reliability, X: Theory X subscale										2.G/Y	0.350	0.757
Y: Theory Y subscale										3.G/Y	0,338	0,751

Çelik and Yılmaz (2016) AGFI above 0.90, GFI above 0.85; Özdamar (2016) $\chi 2$/sd is less than 5, CFI is over 0.90, RMSEA is less than 0.1, RMR is less than 5; Bayram (2016), on the other hand, stated that the model has acceptable fit indices when the NNFI is above 0.90 and the SRMR is below 0.10. Using the criteria stated above, the model demonstrated acceptable fit indices in all three sample groups in Table 4.. AGFI and GFI were low in the 2nd study group because of the low number of managers in this group. These indexes are very sensitive to the number of samples (Mulaik, James, Van Alstine, Bennett, Lind, Stilwell, 1989). CR gives clues about the factor's construct reliability, namely convergent validity, using the factor loadings and error variances of the items in the same factor. In this study, since the findings related to CR in all groups and subscales were higher than 0.7, it gives positive clues about construct reliability in both factors. On the other hand, AVE is a criterion that reveals the similarities between the items representing the latent structure, that is, the factor, and it should be above 0.5 (Gürbüz, 2019). In this study, it is seen that the three groups do not fully meet this criterion. However, Fornell and Larcker (1981) stated that the convergent validity of the constructed construct is still sufficient when the average variance extracted (AVE) is less than 0.5. Still, the composite reliability (CR) is higher than 0.6. In this case, it can be said that the convergent validity of both scales is sufficient. The CR value must be greater than the AVE value for the finally validated model to be conjoint valid. This condition was met in all subscale groups (Gürbüz, 2019).

Reliability analysis results of the developed scale

For the scale's reliability, the internal consistency of the items was examined with the alpha method, and the Cronbach Alpha coefficient was calculated. The scale's reliability was also tested by split-half analysis, and the Spearman-Brown coefficient was calculated for each factor. The results of the reliability analysis of the final scale regarding the factors and the t-Test results regarding the difference between the 27% lower and upper group averages are shown in Table 5.

Table 5. Item scale score correlation and lower upper group means difference item analysis findings

Rank No	İtem No	n	Item Scale Score Correlation	n1+n2	Difference between Lower and Upper Group Means t-Test Results	Cronbach α	Spearman r_s
Subscale (Theory X)						.775	.722
1	1	190	.647**	102	-11.646**		
2	2	190	.659**	102	-9.274**		
3	4	190	.676**	102	-11.257**		
4	6	190	.702**	102	-12.115**		
5	8	190	.606**	102	-7.745**		
6	10	190	.517**	102	-6.418**		
7	11	190	.752**	102	-14.988**		
Subscale Theory Y)						.750	.702
8	3	190	.669**	102	-11.249**		
9	5	190	.675**	102	-11.031**		
10	7	190	.664**	102	-10.533**		
11	9	190	.598**	102	-10.034**		
12	12	190	.690**	102	-12.190**		
13	13	190	.708**	102	-12.884**		

**p<0.01

According to Table 5, the item-total score correlation coefficients of the theory X subscale range from .517 to .752, and the theory of Y subscale is between .598 and .708. The correlation coefficients in both scales are significant at $p<0.01$ and are found to be positive. Items with a low correlation with the scale score should be removed from the scale as they contribute little to the characteristic to be measured (Tezbaşaran, 2008). This is not the case when the correlation coefficients of the items with the scale score are considered. According to the item analysis findings based on the difference between the upper and lower group averages of both subscales, it is seen that the difference between the lower and upper group averages is significant at the $p<0.01$ significance level. In item analysis based on the difference of means, if the sub-group mean of the items is significantly lower than the upper-group mean, this item should be included in the scale (Tezbaşaran, 2008). The lower and upper group averages of all items differed significantly. In this case, it is understood that no item should be removed from the scale. The internal consistency coefficient ('Cronbach's alpha) of the subscales of the X and Y theory was found to be .775 and .750, respectively.

Findings regarding the level of beliefs of school administrators based on X and Y theory

In line with the second sub-problem, the belief levels of school administrators regarding the nature of employees in terms of X and Y theory are determined and presented in Table 6.

Table 6. Belief levels of school administrators on the nature of human by groups

X Theory Factor Items	1. Gr		2. Gr		3. Gr	
	$\bar{x}$	Sd	$\bar{x}$	Sd	$\bar{x}$	Sd
1. Most employees strive towards organizational goals through external monitoring and threats.	2.80	1.26	3.18	1.41	2.95	1.33
2. Most employees avoid taking responsibility.	3.41	1.15	2.79	1.43	3.17	1.30
4. Most employees are lazy; they don't want to work.	2.36	1.15	2.33	1.31	2.35	1.21
6. Employees need external control and pressure to work towards organizational goals.	2.64	1.16	2.90	1.35	2.74	1.24
8. Most employees have lack of ambition.	3.28	1.02	3.24	1.08	3.27	1.04
10. Most employees have a natural tendency for being managed rather than managing.	3.14	1.00	3.28	1.24	3.19	1.10
11. Most employees will get away from work if they can find a way.	2.95	1.13	2.77	1.30	2.88	1.20
Theory X Arithmetic Mean	2.94		2.93		2.93	
Theory Y Factor Items						
3. Employees who are devoted to the organization's mission manage and regulate themselves in the workplace.	4.16	.811	4.13	1.00	4.15	.891
5. If the conditions are right, employees will be willing to accept responsibility in the organization.	4.03	.819	4.17	.862	4.09	.837
7. Imagination, which is common among employees, can be utilized in solving organizational problems.	3.80	.866	3.76	1.01	3.78	.926
9. In organizations, 'people's talents can be utilized much more.	4.28	.745	4.19	.802	4.25	.768
12. Employees commit to organizational goals that respond to self-actualization needs.	3.94	.791	3.78	.932	3.88	.851
13. Work is not something that most employees are born hating.	4.00	.973	3.77	1.07	3.91	1.01
Theory Y Arithmetic Mean	4.04		3.97		4.01	

When Table 6 is examined, it is seen that the school administrators agreed with the assumptions of the theory X at a moderate level ($\overline{X}$:2.94, $\overline{X}$:2.93, $\overline{X}$:2.93) in all three study groups. In contrast, the assumptions of the theory Y were close to a high level ($\overline{X}$:4.04, $\overline{X}$:3.97, $\overline{X}$:4.01).

Examining the Relationship Between Scale Scores Based on X and Y Theory

In the context of the third sub-problem of the research, the relationship between the sub-scales of the measurement tool developed based on X-Y Theory was examined and the findings related to the analysis made in the SPSS 22 program are shown in Table 7.

Table 7. Findings related to correlation between X and Y theory subscales

	N	Correlation between Theory X and Theory Y subscales	p
1. Group	190	-.195	0. 007
2. Group	121	-.239	0.008
3. Group	311	-.291	0.000

**p<0.01

Pearson Correlation Analysis was applied to reveal the possible correlation coefficient between the subscales developed based on the X and Y theory assumptions. As a result of the analysis, it was found that there were low, negative, statistically significant relationships between the X and Y theory subscales in all three study groups was found (p<0.01).

Examining the Beliefs of School Administrators on Human Nature in Terms of Some Variables

Within the scope of the last sub-problem of the study, a T-test and One-Way Analysis of Variance was applied to reveal whether the Subscales of the Belief in the Nature of Human Scale differ according to the demographic variables of school administrators. The findings are presented in the tables below.

Table 8. One-Way analysis of variance findings on whether school administrators' beliefs about human nature differ according to school type

Variables	School Type	n	$\overline{X}$	Sd	F	p	Difference
X Theory	Pre-school (A)	25	21.52	5.88	5.663	.001*	B-A* B-C** B-D**
	Primary Sch. (B)	113	18.87	5.05			
	Secon. Sch. (C)	96	21.61	5.95			
	High Sch. (D)	77	21.48	5.43			
		Sum of Sq.	Sd.	Mean Sq.	F	p	
Y Theory	Between groups	50.801	3	16.934	1.356	.256	-
	Within group	3835.025	307	12.492			
	Total	3885.826	310				

**p< 0.01, *p<0.05

As a result of a one-way analysis of variance applied to reveal whether school administrators' beliefs about human nature differ according to school type, X theory scores differed statistically (p<0.01, F:5.66). In contrast, Y theory scores did not differ (p>0.05, F: 1,356). Since the group variances were homogeneous, the LCD test was applied to reveal the difference between school types. According to the results of the LCD test, primary school administrators' X theory score averages ($\overline{X}$:18.87) were found to be statistically significantly lower than preschool ($\overline{X}$:21.52), secondary school ($\overline{X}$:21.61) and high school ($\overline{X}$:21.48) averages.

Table 9. Findings regarding whether the beliefs of school administrators about human nature statistically differentiated according to the variable of task type

Variable	Task Type	N	Mean	sd	t	p
X Theory	School Principal	194	20.17	5.74	-1.778	.076
	School Prin. Assist.	107	21.38	5.51		
Y Theory	School Principal	194	24.36	3.53	1.563	.119
	School Prin. Assist.	107	23.70	3.45		

*p<0.05

As a result of the t-Test performed according to Table 9, it was found that school administrators' X theory and Y theory scores did not differ statistically according to the task type variable (p>0.05).

Although the findings show no significant difference in the X and Y theory scores of the school administrators according to the task types, the t scores are close to the level of significance. When the arithmetic averages are examined, it is seen that the beliefs of the assistant directors about human nature are more negative than those of the school principals (theory X subscale scores are higher), and their beliefs about the theory Y have a lower average than those of the school principals.

The seniority of school administrators in the Ministry of National Education (X theory p>0.05, F: .981, Y theory p>0.05, F: 1.001), seniority in the administrator (X theory p>0.05, F: .840, Y theory p>0.05), F: .877), an education level (X theory p>0.05, F: 1.833, Y theory p>0.05, F: 2.214), age (X theory p>0.05, F: .809, Y theory p>0.05, F: .634), the number of teachers in their schools (X theory p>0.05, F: .760, Y theory p>0.05, F: .828), gender (X theory p>0.05, t: -.424, Y theory p>0.05, t: -.376), the levels of belief in human nature did not differ.

Results and Discussion

This study aims to create a measurement tool that will expose school administrators' beliefs about human nature, based on McGregor's X and Y theory assumptions, that can provide convincing evidence for its validity and reliability. Using the measurement tool developed afterward, the belief levels of school administrators about human nature and whether these belief levels differ according to some demographic variables were revealed. The relationship between the scores obtained from the X and Y theory subscales was also determined in the study.
As a result of the exploratory factor analysis of the developed scale items, it was understood that the scree plot analyzed was gathered around two factors with an eigenvalue higher than 1 and explaining almost half of the scale variance, as designed. The fact that there is a large difference between the lowest eigenvalue of the scale accepted as a factor of 2.011 and the next eigenvalue of 0.994 confirms the two-factor structure reached. Confirmatory factor analysis and composite reliability (CR) confirmed the factor structures of the developed subscales. In the first factor of the scale, there are 7 items based on McGregor's (1970) X theory assumptions, and in the second factor, there are 6 items based on Y theory assumptions. It can be said that the item numbers are balanced in terms of representing the factors.

Item-total score correlations, sub-upper group mean difference analysis, 'Cronbach's Alpha reliability coefficients provide satisfactory evidence for the reliability of the developed measurement tool. On a 5-point Likert scale, the lowest value obtained from the X factor is 7, with a maximum value of 35; the lowest value obtained from the Y component is 6, with a maximum value of 30. In light of all these findings, it was concluded that scientifically persuasive evidence could be presented about the construct validity and reliability of a measurement tool based on X and Y theory in a sample of school administrators, which was in line with the research's first question.
By the study's second question, the belief levels of school administrators in the study groups on human nature were determined within the scope of the research. Accordingly, it was found that the mean scores based on the theory of X assumptions of the first and second sample groups participating in the research were near to each other ($\overline{X}$:2.94, $\overline{X}$:2.93) and moderate. It is seen that the mean scores based on the Y theory assumptions of both study groups are similar, close to the high level ($\overline{X}$:4.04, $\overline{X}$:3.97). According to a study by Sabancı (2008), the mean of school principals' beliefs about human nature, determined by a 4 Likert-type scale, was found to be $\overline{X}$: 2.68 for theory X and $\overline{X}$: 2.77 for theory Y.

Taş (2011) found that, according to teachers' and principals' perspectives, school principals' management philosophies are mostly based on the Y theory assumption. In a study done by Ayral (2020), according to teacher views, school principals' X theory means were close to the middle level ($\overline{X}$:2.87), while their Y theory means were close to the high level ($\overline{X}$:3.70). While teachers' perceptions of the X theory were similar to the current study, school administrators' perceptions of the Y theory were found to be higher in the current study. The research findings expressed are in parallel with the findings of this study. Based on previous studies, it can be stated that the perception of the Y theory among school administrators has improved. Administrators can combine individual and organizational goals; it may be stated in this context. Administrators with an attitude based on the assumptions of theory Y aim to encourage creativity and innovation, minimize control, make the work attractive and meet the needs of employees at a high level to give more freedom to their employees (Drucker, 2008; cited in Daneshfard & Rad, 2020).

The moderate level of beliefs based on theory X assumptions is not desirable in educational institutions. Because of the negative beliefs about human nature, the controlling attitudes of the managers and their pessimism in their relations may cause their subordinates to have an obedient tendency. This situation may cause employees to try to do the job to the letter as stated to them without questioning it to please their managers. Since the management attitude based on the assumptions of the theory X carries the belief that the employees will be treated with the same attitude, oppressive control mechanisms may take place in the management processes. This circumstance

may hinder the school's innovation and development activities. Education's most precious asset is creativity. A reduction in educators' creativity can result in the worst-case scenario.In most institutions, the order is considered important at the expense of inhibiting creativity. This may make it difficult for the institution to respond creatively to changing environmental needs (Mattaliano, 1982). While school administrators' belief in human nature based on X theory is moderate, it will be difficult for them to create school conditions that will allow employees to manage themselves by connecting them to the school's goals based on Y theory. In their research, Almeida, Caetano, Duarte (2018) found that organizations emphasizing the Y theory offer an organizational culture that is sensitive to changes in the organizational environment; therefore, they adapt to the adaptive culture structure.

When the findings regarding the third sub-problem of the study were examined, it was seen that there was a low level of negative correlation between the sub-scales of the belief in human nature (X and Y sub-scales). This finding supports the idea that theory Y assumptions are not the opposite of theory X assumptions. Based on these findings, the Y theory does not have the opposite beliefs of the X theory; instead, it can be said that it emphasizes the belief that experiences and environmental conditions shape human nature. For example, while theory X asserts that "A normal person prefers to be governed, wants to avoid responsibility, and has little ambition", theory Y does not suggest that "A normal person prefers to lead, tries to take responsibility". Instead, theory Y emphasizes the conditions and experiences of the individual. Therefore, the relevant assumption of theory Y is that ""Under favorable conditions, the ordinary person learns not only to accept but also to seek responsibility"". The emphasis on conditions is on the experience of employees. The contribution of school administrators in the formation of experiences is shaped according to the environment (school culture, school climate, versatile communication, supporting teachers, participation in the decision-making process, safe environment, etc.). In that case, theory Y is not that most people are naturally willing to take responsibility; it argues that employees' responsibility-taking behaviours depend mainly on their experiences and adaptive organizational conditions.

According to yet another example, theory X asserts that a normal person prefers to be governed. In contrast, theory Y asserts that "People use ways of self-direction and control while serving the purposes to which they are attached". In other words, theory Y states that topeople to govern themselves by committing to the organization's goals. This shows that Theory Y assumptions are not the exact opposite of theory X assumptions but a different approach from theory X. It is thought that the perception of these two theories in the literature as the opposite of each other (Madero-Gomez and Rodríguez –Delgado, 2018; Sullivan, 2017) is a misconception. Based on this misconception, accepting X and Y theory as the pioneer of two opposing management styles that lead to autocratic and democratic leadership behaviours may be effective (Sullivan, 2017). This situation makes the validity of the scales developed with the thought that the assumptions of the two theories are opposite to each other controversial. When the idea that X and Y theories are not exactly opposite of each other is accepted, the content of the behaviour set needed in the current conditions to manage employees with different characteristics in organizations will be more enriched regardless of the managers' beliefs in human nature. In other words, people in organizations may have different personalities that respond to X theory assumptions rather than Y theory (Touma, 2021).

In the study, it was examined whether the beliefs of school administrators about the nature of humans differ according to demographic variables. According to the research results, it was understood that the perceptions of school administrators differ according to the type of school they work in the scores obtained from the sub-scale based on the theory X assumptions.

Preschool, middle, and high school administrators have higher beliefs about X theory than primary school administrators. This finding shows that the beliefs of school administrators working in primary schools about human nature are less pessimistic than those working in pre-school, secondary, and high schools. On the other hand, school administrators' beliefsabout Y theory do not differ according to school types. In this context, it can be said that the theory of Y assumptions is more widely accepted, regardless of school type, with the adoption of the contemporary management approach.

Although it was seen that the effect of school administrators' task type on X and Y theory scores was not statistically significant, t values were very close to the 0.05 significance level. Therefore, the difference between the arithmetic means is interpreted. Since the assistant principals mostly act as a bridge between the school principal and the teachers in executing the management processes and operating organizational structure, it is thought that their beliefs about human nature are more negative than the school principals. It is thought that the problems experienced in the school regarding fulfilling the duties negatively affect the beliefs of the assistant principals who are in direct communication with the teachers.

It has been understood that the seniority of school administrators in the Ministry of National Education, their gender, administrative seniority, educational background, age, and the number of teachers in the schools they

work in do not affect the X and Y theory scores. In Sabancı's (2008) study, school principals' beliefs about human nature did not differ according to their experience. Considering that human beliefs gain strong stability over time, it may be possible to develop resistance to variables such as educational status, gender, seniority, age, and size of the target audience. Because school administrators in Turkey are trained on the job, the tendency to continue to the apparent, recognized, existing, and established school management style may facilitate sharing X, and Y views and attitudes regardless of seniority, gender, age, or educational status.

Recommendations

On the basis of the research findings, it is suggested that the Y theory's tenets be incorporated into the management processes of schools, where the human aspect takes precedence over the institutional aspect. Using the scale developed within the scope of this study, the relationship between school administrators' beliefs about the nature of humans and various phenomena and factors, such as school culture, climate, organizational commitment, job satisfaction, and personality traits, can be investigated. In addition, because the scale developed for this study was developed in Turkish, it is recommended that validity and reliability tests be repeated when adapting it to other cultures.

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Conflicts of Interest

Authors declare that they have no conflict of interest.

Ethical Approval

Ethical permission (26/11/2020-E.2000288192) was obtained from educational sciences institution for this research.

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A Study on Parents' Emotion Regulation Skills, Self-Awareness, and Cognitive Flexibility Levels

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A Study on Parents' Emotion Regulation Skills, Self-Awareness, and Cognitive Flexibility Levels

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Abstract

Individuals' cognitive flexibility, their capacity to regulate their emotions, and their ability to be aware of the present moment will positively influence the way they behave toward themselves and their environment. It is considered that parents with these characteristics will exhibit behaviors that influence future generations largely in a positive way. The research aims to test a hypothetical model developed based on the literature to determine the factors affecting the cognitive flexibility of parents. The study group for the research consists of 351 parents with children in various age groups who are attending preschool, primary school, secondary school, or high school. The Cognitive Flexibility Inventory, Emotion Regulation Questionnaire, and Interpersonal Mindfulness in Parenting Scale were utilized as data collection tools in this study. The research was carried out with the relational screening model. Structural equation modeling was used for the analysis of the data. In the model, where cognitive flexibility was accepted as a predicted variable, emotion regulation skills and mindfulness demonstrated a positive relationship. Besides, mindfulness displays a positive relationship with cognitive flexibility.
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Keywords: Cognitive flexibility, Emotion regulation, Mindfulness, Parents.

Introduction

Individuals who can adapt to rapidly changing social structure under the influence of science and technology have distinct characteristics. One of these features is cognitive flexibility (Martin & Rubin, 1998). Cognitive flexibility refers to the ability to cognitively develop and enforce new response arrangements in the face of changing environmental conditions (Martin & Rubin, 1995). It has been stated that individuals with high cognitive flexibility could prepare themselves for exhibiting new response patterns by evaluating possible situations beyond existing ones (Martin & Rubin, 1998). The concept of cognitive flexibility implies an individual trait that can be understood through life roles such as parenthood. Since it is possible for parents with children of any age to constantly encounter extraordinary situations and change their behaviors according to these experiences (Kobayashi, 2017), therefore, the concept of cognitive flexibility needs to emerge naturally during parenting. Parents' ability to anticipate potential threats to their children and determine their response accordingly may be related to the higher cognitive flexibility levels of parents. According to Martin and Rubin (1998), the variety of responses generated by individuals is also relevant to their cognitive flexibility levels. It has been observed that cognitively flexible individuals behave confidently in their relationships (Bandura, 1977; Martin & Rubin, 1995). In this regard, cognitive flexibility could be addressed as an important skill for parents to better regulate relationships with their children. In line with this information, Koesten, Schrodt, and Ford (2009) discovered in their study that cognitive flexibility fully mediates the effects of the power of self-expression and avoidance of conflict on the well-being of the family.

In the review of the national literature on cognitive flexibility, it was seen that the interest in this concept has gradually escalated in recent years and that cognitive flexibility has been studied with various groups and variables (Chen et al., 2022; Miles et al., 2022; Şahin Taşkın & Esen Aygün, 2022). However, the research, especially on the cognitive flexibility of parents, is limited. For example, Altunkol (2011) demonstrated a negative relationship between the perceived stress levels and the cognitive flexibility levels in university students. Küçüker (2016) investigated the possible roles of forgiveness, unforgiveness, and cognitive flexibility variables in the relationship between emotion regulation strategies and life satisfaction in university students. Atayeter (2020) determined that

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parents with high cognitive flexibility make positive impacts on their children's temperament characteristics. Çetin (2020) discovered that an increase in cognitive flexibility, combined with language learning motivation would lead to favorable results during foreign language learning in university students.

It is observed that the concept of cognitive flexibility has been examined in conjunction with various concepts in the international literature. Johnco, Wuthrich, and Rapee (2014) investigated the effects of cognitive flexibility on treatment outcomes and the acquisition of cognitive restructuring skills during the treatment of anxiety and depression in older adults. Al-Jabari (2012) examined the relationship between self-esteem, psychological and cognitive flexibility, and psychological symptomatology. The results suggested that cognitive flexibility has been found to be negatively correlated with psychological symptoms. Lin (2013) searched for the relationships between cognitive flexibility and openness to change and concluded that this relationship was positively related to academic achievement. Soltani et al. (2013) evaluated cognitive flexibility along with depression, resistance, and coping styles, and their results suggested a positive relationship between them.

Cognitively inflexible individuals are often rigid and dogmatic. Their rigid mindset is characterized by irrational thoughts, which can lead to psychological disorders such as depression (Dağ and Gülüm, 2013; Özdemir, 2019). According to Beck (1967), depressed people often experience a discrepancy when they compare the messages arising from the environment with their own depressive beliefs. This discrepancy causes the individual to show resistance to accepting and believing what actually happened rather than his own reflections. In other words, inflexible individuals fail to adapt their feelings and thoughts to different situations. Inflexibility and being narrow-minded create certain difficulties on part of the individual and thus, may impair mental health (Martin et al., 1991). This finding may be interpreted as an indicator of a close link between cognitive flexibility and emotion regulation skills.

Emotions direct a person's thoughts and actions in life. Individuals often integrate their thoughts and behaviors with their emotions and make sense of them. The emotions inform individuals about the intentions of others, whether a situation is good or bad, and the trajectory of social behavior (Gross, 1998; Hebb, 1949; Keltner & Gross, 1999; Young, 1943). If there is anything that is more critical than emotions, it is the ability to regulate them. Emotion regulation skills are the efforts of individuals to be able to successfully direct and regulate their emotions to maintain their harmonious and functional integrity despite changing environmental conditions (Gross, 1998; Thompson, 1994).

Especially when it comes to parents, it is known that the emotions they encounter usually vary along with the differentiation of the developmental stages of their children. Parenting itself is an emotional experience that includes emotions such as happiness, anger, sadness, anxiety, and commitment (Dix, 1991). It seems obvious that parents' emotion regulation skills are considered an important determinant of their self-regulation and adaptation skills (Barros et al, 2015). It is stated that parents' skillfully being aware of their own emotions has a positive impact on their sociability in the family, the strength of relationships, and even the emotion regulation skills of their children (Bariola et al., 2011). In the literature, it is observed that the research on emotion regulation is constantly increasing, and its links to various concepts are also examined. A positive relationship between children's emotion regulation behaviors and mothers' socialization behaviors was identified (Secer, 2017). It was stated that there is a positive association between the mothers' and their children's disclosure about their emotion suppression (Bariola et al., 2011). Emotional regulation skills in parents are obviously important and necessary in issues such as raising healthy children and maintaining family welfare. It does not seem possible to implement emotion regulation skills without integrating awareness and attention components. Mindfulness ranks first among the concepts that positively affect emotion regulation skills (Teper et al, 2013). Similarly, there are the research findings that could be interpreted as proof of the feasible influence of mindfulness on cognitive flexibility (Lebares, 2019). Based on these studies and theoretical knowledge, it is considered that this relationship between emotion regulation skills and cognitive flexibility, which are observed to be closely related, is mediated by mindfulness.

In the review of the literature, it is identified that there are empirical studies examining emotion regulation skills, mindfulness, and cognitive flexibility, and some of them are summarized here. It has been revealed that there is a positive relationship between children's emotion regulation skills and their mothers' mindfulness levels (Ren et al., 2021). Furthermore, it has been stated that acquired training or earned specialization in any job leads to the automatization of a person's skills, that is, they are used to elicit responses regardless of cognitive flexibility (Cañas et al., 2003). It is known that conscious awareness is inversely proportional to automation of the skills. All kinds of autopilot actions in daily life may impair the levels of consciously being aware. This could be related to parents' automatization of parenting roles, in which these roles frequently maintain themselves without conscious

awareness, and parents demonstrate less cognitive flexibility in new situations. According to Siegel (2007), the concept of mindfulness is "being able to get out of autopilot and focus consciousness on the present moment, and consciously grasp this moment." Mindfulness is a concept that was born from the experience of "being in the present moment" in eastern philosophies. The various researchers seem to emphasize the same points, albeit in different ways. The experience of being in the present moment is to feel alive in the lived experience, to discern the experience voluntarily, to direct attention to the current experience, and to accept the experience as it is (Germer, 2009; Hanh, 1991; Kabat-Zinn, 2003). Mindfulness is defined as an orientation that includes curiosity, openness, and acceptance, and the maintenance of attention in the present experience through self-regulation skills (Bishop et al., 2004).

Although mindfulness studies have been around for decades, they appear to have only recently become a subject of studies on parents (Sawyer Cohen & Semple, 2010). When parents are mindful, they are present in the present moment with their children. More specifically, it enables parents to approach their children carefully despite their own failures and limitations during their parenting adventure (Kabat-Zinn & Kabat-Zinn, 2014; McCaffrey, Reithman & Black, 2017; Moreira & Canavarro, 2019). In the review of the studies on the mindfulness of parents, it was evident that mindfulness is not a goal but a journey that must always be continued all the way through life, it has a significant impact on children's behavioral problems; that it predicts the well-being of families, particularly for children and that there have been some studies conducted on family education programs based on various mindfulness concepts (Dumas,2005; Kabat-Zinn and Kabat-Zinn, 2021; Ren et al., 2021).

In today's world, people are oriented to do many things at the same time, with more duties and responsibilities. Many areas, such as technological developments, epidemic processes, perceptions of normality, and education systems, will all influence individuals' behaviors. Therefore, parents have to manage their own personal change and to deal with the varying needs of their children at the same time. The ability to meet their children's physical needs in the modern world gradually transformed into a struggle to become parents who should be sufficient in every way in the post-modern world. One of the parental understandings that have spread rapidly among parents, especially in recent years, is the positive parenting approach. Positive parenting has been defined as an approach that includes "appropriate parenting behaviors that nurture, empower, involve no violence, set boundaries to ensure the whole child's development, and provide guidance by recognizing the child" (Committee of Ministers of the Council of Europe, 2006). Again, there is the "unconditional parenting" approach, which became popular in social life. This approach gives families advice on how to respond to their children's mistakes, how to deal with crisis situations, and how to address problematic behaviors in children(Kohn, 2015). These and similar parenting styles suggest that research should focus more on parents Thus, it is required to conduct a study on parents after consideration of the aforementioned explanations. After the examination of developmental neuroscience studies, it is known that people have various adaptive and coping skills in different life stages. Gopnik et al. (2017) identified in their study that cognitive flexibility undergoes certain changes during childhood, adolescence, and adulthood. High levels of cognitive flexibility, in particular, are thought to provide the necessary strength to parents for easily adapting to their parenting roles and personal relationships during such a complex life period as being a parent. Besides, the high level of mindfulness of the parents would enable them to be more aware of their emotions and to experience emotions in line with the situations they encounter. Similarly, this will facilitate parents' ability to respond appropriately to new and different situations, that is, to be more cognitively flexible. For this reason, mindfulness may have an enhancing effect on cognitive flexibility (Bilgin, 2009; Cox, 1980; Moore & Malinowski, 2009; Stevens, 2009). As a result, the purpose of this study was to put the structural equation modeling of emotion regulation skills and mindfulness levels to the test in order to better understand the cognitive flexibility levels of parents. Along with this model, it is intended to contribute to future studies aimed at understanding and developing parents' cognitive flexibility levels. This will enable field practitioners to use techniques and skills such as mindfulness in their interviews with parents. Maternal depression has been determined to be related to externalizing disorders characterized by childhood depression, anxiety, and impulse control. The importance of training based on mindful parenting for the prevention of these conditions is also mentioned(Sawyer Cohen & Semple, 2010). In the light of this information, it is considered that the results obtained from this study will make a contribution to school counselors, family counselors, and, briefly, all professionals working with parents in applying training programs based on mindfulness. Herein, it seems important to examine how the mindfulness levels of parents play a role in the relationship between cognitive flexibility levels and emotion regulation skills. As a result, the study's goal is to look into the role of mindful parenting in mediating the relationship between parents' emotional regulation skills and cognitive flexibility levels. In line with this general purpose, the answers to the following questions were searched for.

1) Are there any significant relationships between cognitive flexibility, emotion regulation, and mindful parenting variables?

2) Is the model that analyzes the mediating role of mindful parenting in the relationship between parents' cognitive flexibility and emotion regulation skills confirmed?

Method

The Research Model

This research is a descriptive study based on the relational screening model, which was conducted to determine the relationships between parents' emotional regulation, mindfulness, and cognitive flexibility levels.

The Study Group

The study group of the research consists of 351 parents who have children in preschool, kindergarten, primary school, secondary school, and high school under the management of the Ministry of National Education in the 2020-2021 academic years. The demographic information of the parents and their children in the study group, such as gender, age, educational status, and occupation, is presented in Table 1.

Table 1. Demographic features of participants

Variables		Frequency	Percentage	Total
Gender	Female	285	81.2	351
	Male	66	18.8	%100
Education level	Primary school	18	25.1	351
	Secondary	11	3.1	%100
	High	48	13.7	
	University	189	53.8	
	Master	85	44.2	
Age	22-29	46	13.2	349
	30-39	249	71.3	%99.4
	40-50	54	15.5	
Occupation	Teacher	139	39.6	351
	Housewife	91	25.9	%100
	Health workers	32	9.1	
	Government official	19	5.4	
	Engineer	10	2.8	
	Private sector	40	11.4	
	Other	20	5.7	
The age of the children	Preschool	215	61.3	351
	Primary	27	7.7	%100
	Secondary-High	20	5.7	
	Having children at different ages	89	25.4	
The number of children	One child	185	52.7	351
	Two children	128	36.5	%100
	Three children	32	9.1	
	Four children	3	0.9	
	Five children	3	0.9	

The Measurement Tools

The personal information form: The personal information form prepared by the researchers includes questions about age, gender, education level, occupation, number of children, and the children's age.

The cognitive flexibility inventory: This inventory was developed by Dennis and Vander Wal (2010) to identify the cognitive flexibility levels of adults. The adaptation study of the inventory to Turkish culture was carried out by Dag and Gulum (2012). Three types of scores are obtained from this measurement tool, namely two subscale scores as *Alternatives* and *Control*, and a total score. According to the reliability study of the inventory, Cronbach's alphas for *Alternatives, Control* subscales, and total score were .89,.85, and .90, respectively. As a part of the validity study, the criterion validity analyses demonstrated that it measured the desired structure.

For this study, the internal consistency coefficient of the Cognitive Flexibility Inventory was found to be .87.The information regarding the validity study is as follows: χ^2=2090,4, sd=662, χ^2/sd=3.15, RMSEA=0.07, SRMR=0.04, GFI=0.90, AGFI=0.87, CFI=0.88, NFI=0.87, NNFI=0.90.

The questionnaire on effect regulation The Emotion Regulation Scale was developed by Gross and John (2003) to determine individuals' emotion regulation tendencies in basically two categories. It consists of two subscales: "*Cognitive Reappraisal*" and "*Expressive Suppression.*" The adaptation study of the scale into Turkish was conducted by Eldeliklioğlu and Eroğlu (2015). According to the reliability study, Cronbach's alphas for *Cognitive Reappraisal* and *Expressive Suppression* scores were.78 and.73, respectively. Cronbach alpha values for the test-retest cognitive reappraisal and expressive suppression scores are.74 and.72, respectively.

Cronbach's alpha internal consistency coefficients for the *Cognitive Reappraisal* and *Expressive Suppression* scores for this study were found to be.76 and.66, respectively. The findings regarding the validity study are as follows: χ^2=338.4, sd=70, χ^2/sd=4.83, RMSEA=0.10, SRMR=0.04, GFI=0.90, AGFI=0.87, CFI=0.88, NFI=0.88, NNFI=0.88

The interpersonal mindfulness in parenting questionnaire: The scale developed by McCaffrey et al. (2017) was utilized to determine the mindfulness levels of parents. The Interpersonal Mindfulness Scale in Parenting, which Arslan Gördesli, Arslan, ekici, Sünbül, and Malkoç (2018) adapted into Turkish, consists of 24 items and two subscales. As a part of the reliability studies, Cronbach's alpha values were detected for the two subscales, namely "*Parental Self-efficacy*" and "*Being in the Moment the Child*" as.83 and.73., respectively. For this study, the Cronbach alpha internal consistency coefficients for *Parental Self-efficacy* and *Being in the Moment with the Child* scores were found to be.84 and.80, respectively. The results of the validity study are as follows: χ^2=1356.3 sd=504, χ^2/sd=2.69, RMSEA=0.07, SRMR=0.04, GFI=0.92, AGFI=0.90, CFI=0.90, NFI=0.90, NNFI=0.91

Data Collection

In the data obtaining process, we contacted researchers who adapted the measurement tools that were planned to be primarily used in this study via email. Permission was requested for using the scales, and all information about general characteristics, psychometric properties, and scoring of the scales was provided by the researchers. After receiving approval from Ağrı İbrahim Çeçen University's Ethics Committee, the scales were administered to volunteer parents. The convenience sampling method, one of the non-probability sampling methods, was used. The schools in the city where the researchers are located were contacted. The research questions were sent to the volunteer parents via the internet. The researchers examined the Google Form documents they obtained.

The Analysis of the Variables

Before data analyses, it was examined whether some assumptions were met. These assumptions included sample size, extreme values, normality, linearity, multicollinearity, and sequentiality. For missing data, value assignment was performed with the mean of the series. Raw scores were converted to Z-scores for outlier analysis. Twenty people with a Z score of ±3.29 were excluded from the data set (Tabachnick & Fidell, 2014). The Mahalanobis distance value was checked to see if there was an extraordinary combination between the variables, there was no problem. detected. For the assumption of normality, the histogram graph and descriptive statistics values were checked. The kurtosis and skewness coefficients of all variables are within the range of ±1. It was determined that the variables showed a normal distribution. Variance increase factors (VIF), condition index (CI), and tolerance values were examined to determine whether there was a multicollinearity problem. It was determined that there was no multicollinearity problem between the variables. Afterwards, the relationship between cognitive flexibility and other variables was evaluated with the Pearson Product Moments Correlation Coefficient. Then, the measurement model arising from the hypothetical model, which was the subject of the investigation, was tested with Confirmatory Factor Analysis. In the last stage, the proposed hypothetical model was analyzed with the structural equation modeling technique. LISREL 8.7 and AMOS 23 statistical package programs were used in the research.

Results

For answering the research question within the scope of this study, firstly, the relationships among the variables in the model to be tested were examined. The results are presented in Table 2.

Table 2. Correlations between the variables

Variables	1.	2.	3.	4.	5.
1.Parental Self-efficacy	1	.695**	.446**	.055	.272**
2.Being in the Moment with the Child		1	.447**	.037	.298**
3.Cogntive Flexibility			1	-.096	.361**
4.Expressive Suppression				1	-.015
5.Cognitive Reappraisal					1

**p<.01

As it is obvious from Table 2, there are significant relationships between the variables in the hypothetical model proposed for this study. Accordingly, cognitive flexibility was significantly related to parental self-efficacy (r=.45, p<.01), being in the moment with the child (r=.45, p<.01), and reappraisal (r=.36, p<.01). These results obtained from the relationship between the variables suggest an important finding in the validation of the hypothetical model.

In the research, the measurement model was tested to examine the suitability of the measurement tools used before the structural model test. It is seen that the measurement model gives sufficient and good fit values to test the structural model (χ^2/Sd=1.58, RMSEA=0.057, SRMR=0.062, CFI=0.90, NFI=0.90, GFI= 0.89, AGFI=0.90). The fact that a measurement model has the same structure in different groups means that the model to be tested could measure the same features every time. This is called measurement invariance (Mark & Wan, 2005). In this study, gender invariance was examined to determine whether the models to be tested were invariant in terms of gender. At the end of the analysis, it was found that this measurement model, which included negative parenting, did not change with regard to gender [ΔX2 = 6110.4 df= 2748, p>.001; ΔRMSEA= 0.059, ΔCFI=0.01].

It was observed that the measurement models tested provided acceptable fit values. In this context, structural equation modeling related to the hypothetical model was performed, and the representation of the model is presented in Figure 1.

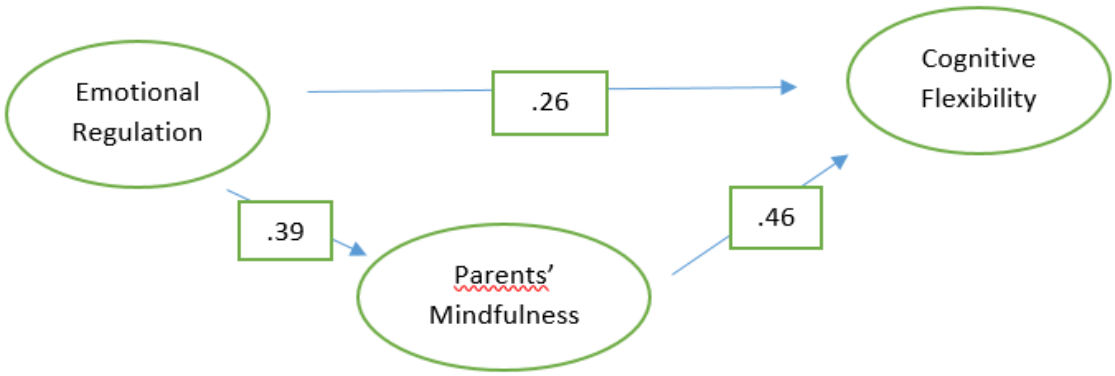

Figure 1: Representation of the hypothetical model

It is seen that the fit values of the hypothetical model were within acceptable limits (χ^2/Sd=2.7, RMSEA=0.060, SRMR=0.061, GFI=0.91, NNFI=0.89, AGFI= 0.91, RFI=0.89). The statistical significance of the relationships between the latent variables in this model was interpreted according to t values and standardized beta coefficients. The results of these calculations are given in Table 3.

Table 3. Standardized values and t values for the hypothetical model tested

Structural Relations			Standardized beta coefficients (β)	t values
Emotional Regulation	⟹	Parents' Mindfulness	0.39	5.11
Parents' Mindfulness	⟹	Cognitive Flexibility	0.46	2.91
Emotional Regulation	⟹	Cognitive Flexibility	0.26	5.15

According to Table 3, it seems obvious that the variables in the tested hypothetical model predict each other significantly. According to this model, parents' levels of emotion regulation significantly predict their levels of mindfulness (β=.39, t=5,11 p<.01). mindfulness levels predict cognitive flexibility levels significantly (β=.46, t=2,91 p<.01). Emotion regulation levels predict cognitive flexibility levels significantly (β=.26, t=5,15 p<.01).

Discussion, Conclusion, and Recommendations

This study was conducted to examine the mediating role of mindfulness levels in the relationship between parents' cognitive flexibility levels and emotion regulation skills. Structural equation modeling was utilized in the study since the research aimed to reveal the cause-and-effectrelationship and the mediation effect for the relationships between these variables. The results of the correlation analysis revealed that there is a significant relationship between cognitive flexibility and parental self-efficacy, which is the subscale of the Interpersonal Mindfulness in Parenting Questionnaire, and between being in the moment with the child and the cognitive reappraisal subscale of the Emotional Regulation Questionnaire. According to the structural equation analysis, a good level of fit was identified between the collected data and the predicted model. The results of the study revealed that emotional regulation skills could be predicted from the cognitive flexibility levels of the parents, and this relationship was almost entirely explained through mindfulness. In other words, mindfulness levels acted as a mediator between cognitive flexibility and emotion regulation skills.

The results of the study exhibited that emotion regulation affects cognitive flexibility both directly and indirectly through mindfulness. Given the positive relationship between emotion regulation skills and cognitive flexibility, the findings support the findings of previous studies (Leahy et al., 2011; Murphy, 2015). In a study examining the relationship between emotion regulation, life satisfaction, cognitive flexibility, and forgiveness-unforgiveness variables; maladaptive emotion regulation strategies were found to be associated with less cognitive flexibility. In other words, it was concluded that cognitively flexible individuals could use their emotion regulation skills more adaptively (Küçüker, 2016). The effects of yoga exercises on the individual's cognitive flexibility and emotion regulation skills were examined, and their positive effects were observed (Dick et al., 2014). According to the aforementioned study, an individual's inability to be in the moment leads to a loss of cognitive flexibility and avoidance of the present moment, which prevents the individual from gaining awareness and thus incapacitates him in regulating emotions. In the light of these studies, it could be suggested that parents who are able to regulate their emotions in accordance with the present situation could organize their thoughts according to this situation, take into account, and create better options for themselves. In this way, it is predicted that parents could maintain both the relationship between themselves as a couple and their relationships with their children in a more positive way. In addition, it is known that the role of parenting bears considerable stress by its nature (Rousseau et al., 2013). In stressful situations, cognitive flexibility is determinant in controlling people's emotions (Demirtaş, 2019). For this reason, it could be inferred that cognitively flexible parents could effectively cope with stressful situations they encounter while in their parenting roles and could easily regulate their emotions. This skill will make a positive contribution to the way parents raise their children and enable them to display more affirmative behaviors towards their children.

According to another result of this research, there is a direct relationship between mindfulness and emotion regulation skills. People who use mindfulness more actively could regulate their emotions in a more favorable direction. This finding is in line with the conclusion that the mindfulness-based intervention programs, which were implemented by Deplus, Billieux, Scharff, and Philippot (2016) in their study with adolescents, improved the emotion regulation skills of these individuals. Another study investigating the relationship between mindfulness and emotion regulation in the literature will be described here. Participants were asked to keep records of their emotional experiences six times a day for one week. In these records, the relationship between mindfulness levels, emotional differentiation, and emotional changes was evaluated. According to the results of the research, the recorded emotions were better recognized, identified, and regulated in a healthy way, and it concludes that mindfulness influences the emergence of all these processes (Hill & Updegraff, 2012). Individuals who could be aware of the present moment are considered to be able to feel the emotions that the moment triggers, hear their

thoughts, and exhibit appropriate behaviors in accordance with the moment. From this point of view, it could be suggested that parents who can actually stay in the moment experience their emotions in harmony with the moment. The individual who is aware of his feelings will express himself appropriately and will not have difficulty in acknowledging his wishes and complaints (Gross, 1998). Parents as important role models in a child's life, would set a good example for their children in this respect. Also, parents who are aware of the present moment will spend more quality time with their children. This, in turn, will positively influence the relationship of parents with their children.

Another result of the study is that there is a positive relationship between mindfulness levels and cognitive flexibility. Carmody, Baer, Lykins, and Olendzki (2009) obtained results similar to this research in a model trial they generated to predict the modifications in awareness by variables such as clarification of values, cognitive and behavioral flexibility, and changes in self-regulation. Kaymaz and Şakiroğlu (2020) conducted research and discovered a positive relationship between mindfulness and cognitive flexibility. According to this result, it could be inferred that individuals may give appropriate reactions as long as they are aware of the moment they are in. As parents could regulate their cognitions and emotions altogether, they could also be more functional, and they could become involved in positive situations in their lives to the extent that they could arrange their way of thinking and feeling in the face of upcoming events (Demirci and Güneri, 2020). These types of self-regulation exist only when one accepts what is happening in the moment without a judgmental attitude and accommodates himself to the situations. Kabat-Zinn and Kabat Zinn (2021) suggest that mindful parents (1) are more aware of a child's unique nature, feelings, and needs; (2) are more present and have the ability to listen carefully to their child; (3) accept and remember all pleasant or unpleasant moments as they happen; (4) identify their own reactive impulses and respond more appropriately, creatively, and with greater clarity and kindness. After these are evaluated, it is stated that parents with high levels of mindfulness exhibit more appropriate and creative behaviors that are compatible with the situation. The definition mentioned here is in parallel with the characteristics of cognitively flexible individuals. Flexible individuals could generate various options suitable for a situation and choose the most suitable one among them (Martin & Rubin, 1998). It can be suggested that the definitions given here are similar to each other, and this similarity is supported by the findings of this study. In addition, it would not be a mistake to imply that parents with a high level of these characteristics tend to exhibit more positive parenting behaviors, such as creating various alternatives and choosing the most appropriate one for the situation, and being aware of their children's needs.

Finally, the mediating role of mindfulness in the relationship between emotion regulation skills and cognitive flexibility was identified in this study consisting of model-based testing. It was concluded that these variables displayed a positive relationship with cognitive flexibility. When interpreting the results of the research, it should be taken into account that the study was conducted with only parents. In future studies, it may be possible to work with parents whose children are in similar age groups and attend preschool, primary school, high school, or university. In addition, the variation of the model over time could be followed up with a longitudinal study. In future studies, the possible effects of variables such as meta-emotion, meta-cognition, and the predisposition levels of parents to any mental disorders such as anxiety and depression, which may play a role as mediating variables in the relationship between parents' cognitive flexibility and emotion regulation skills, could be explored. The results of this study are considered beneficial for psychological counselors working in the field. Practitioners could work with parents towards increasing their cognitive flexibility based on Cognitive Behavioral and Rational-Emotive Behavioral Therapy. This approach will enhance their emotion regulation skills. In addition, parent mindfulness as a mediator variable provides a link in the relationship between parents' emotion regulation skills and cognitive flexibility. As a result, we can conclude that mindfulness-based trainings will improve parents' emotional regulation and cognitive flexibility. In this way, parents could be strengthened in terms of these skills through psycho-educational programs and family trainings targeted to increase their levels of conscious awareness.

Author (s) Contribution Rate

The authors' contribution rate in this study is equal.

Conflicts of Interest

There was no conflict of interest between the authors in this study.

Ethical Approval

Ethical permission (5.03.2021 tarih ve 78 sayılı karar) was obtained from Ağrı İbrahim Çeçen University institution for this research.

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Investigation of Preferred Teaching Pedagogies of Preservice Science Teachers through Individual and Team Studies

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Investigation of Preferred Teaching Pedagogies of Preservice Science Teachers through Individual and Team Studies

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Abstract

The purpose of this research is to examine how working individually and as a team in solving pedagogical scenarios for teaching science subjects is reflected in the teaching preferences of preservice science teachers. This interpretive case study was conducted with 69 preservice science teachers studying at a university in eastern Turkey. The data of the study were collected using the teaching pedagogy preference form. The data analysis included descriptive analysis based on four instructional pedagogies: direct instruction, direct active, guided inquiry, and open inquiry. The research results revealed that preservice teachers did not sufficiently turn to inquiry-based teaching pedagogy for solving problem scenarios in both individual and teamwork. In addition, the results indicated that preservice science teachers' professional knowledge of teaching various science subjects is largely based on traditional teaching pedagogy. Based on these results, it is recommended that science educators use problem scenarios to reveal preservice teachers' inquiry-based teaching preferences.

Keywords: Science teaching pedagogy, Preservice science teacher, Inquiry-based teaching, Science Education

Introduction

Many nations, including Turkey, have utilized an inquiry-based approach to science education for decades. In science education, educators prioritize inquiry-based instruction over knowledge transfer (Wang, 2020). In line with this purpose, it is important for teachers to play an effective guiding role in science lessons so that students acquire scientific thinking habits based on inquiry (Osborne, 2014). However, many teachers face difficulties in teaching inquiry science because they believe they do not have the professional knowledge to do so (Gillies & Nichols, 2015). Teachers' knowledge or experience in science teaching obstructs inquiry teaching practices (Crawford, 2014). Aditomo and Klieme (2020) state that inquiry-based teaching is weakened by a lack of resources, a shortage of quality teachers, and the inadequacy of school culture to support inquiry-based science teaching. Studies have shown that teacher-centered teaching approaches cause students to have difficulty learning the complicated language of science (Kang, 2022; Sinatra et al., 2014). Therefore, it is necessary to use student-centered teaching approaches in which students will work in cooperation to increase their interest in science (Kang & Keinonen, 2018). Cairns and Areepattamannil (2019) reported that inquiry-based science teaching has a significant positive relationship with students' interest in learning science, future-oriented science motivation, and self-efficacy tendencies. Therefore, examining teachers' professional competencies and Pedagogical Content Knowledge (PCK) is important to increase academic success (Jüttner et al., 2013).

When science teachers have a high level of PCK, it is easier for teachers to facilitate students' learning (Abell, 2007; Gess-Newsome et al., 2011; Kirschner et al., 2015; Park & Oliver, 2008; Shulman, 1986). Teacher education should concentrate on identifying and developing preservice teachers' PCK (Coetzee et al., 2020). Some courses are very important in the professional preparation of pre-science teachers. It is thought that determining the teaching preferences of the preservice science teachers after taking the Principles and Methods of Teaching (PMT) course will directly affect the course content that science educators will conduct and the sample teachings they will cover in the courses. In addition, it is planned to be relevant not only to science educators, but also to the decisions of education policymakers about science teacher education. After updating the science course curriculum in 2013, it was designed based on the inquiry-based teaching approach and started to be implemented throughout Turkey. Therefore, the current research results will also contribute significantly to the preservice science teacher training processes within the framework of the science course curriculum.

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Current teacher education policies should give preservice teachers with opportunities to assess their teaching knowledge (DeMonte & Coggshall, 2018). One of the most important aims of science teacher education in universities is to enable preservice science teachers to have knowledge about effective and new teaching pedagogies (Cobern et al., 2014). Schuster et al. (2007) emphasize that teachers should direct the knowledge in science to a pedagogy acquired through inquiry, rather than presenting it as a product known to students. Although inquiry-based teaching is known to be important at every grade level, it cannot be applied successfully in science lessons (Capps et al., 2012; Meltzer & Otero, 2015). Effective inquiry-based teaching in science education is influenced by teachers' professional knowledge, attitudes, and beliefs (Lee et al., 2020; Lotter et al., 2018). Studies show that teachers' inability to grasp the inquiry-based teaching process correctly reduces their confidence in this approach and negatively affects their use in their lessons (Roehrig & Luft 2004; Yoon et al., 2012). Teachers face many challenges in how the inquiry should be taught (Gillies & Nichols 2015; Harris & Rooks, 2010). It is understood that a limited number of national (Feyzioglu et al., 2016; Sahingöz & Cobern, 2018) and international studies (Seung et al., 2014; Soprano & Yang, 2013; Wang, 2020) examined the inquiry-based teaching understanding of preservice science teachers. However, teamwork is also important in the preparation process of preservice science teachers (Peters-Burton et al., 2015). On the other hand, there is a significant lack of research on the use of teamwork to evaluate preservice science teachers' inquiry-based teaching pedagogies. An individual's experience working in teams in their university education makes it easier to adapt to business life (Kotlyar et al., 2021). Working as a team is more important than working as individuals (Van den Bossche et al., 2006). Working as a team leads to the emergence of better quality and efficient solutions (De Church & Mesmer-Magnus, 2010; Kwak, 2004). Masats and Guerrero (2018) also emphasize that both teachers and preservice teachers must have teamwork skills in order to facilitate their acquisition of professional knowledge. Therefore, it is very valuable to investigate the extent to which the preservice science teachers make sense of inquiry-based teaching pedagogy through individual and teamwork. Keys and Bryan (2001) emphasized the importance of understanding science teachers' perceptions and practices of inquiry to create a lasting reform in inquiry-based teaching. There is a great need for such studies in order to eliminate the weaknesses of the preservice science teachers' inquiry-based teaching understanding and competencies in the pre-professional period. In this context, it was aimed to examine the distribution of science teaching preferences of preservice science teachers within the scope of individual and teamwork. In line with this purpose, *"How is the distribution of teaching preferences (ready presented science or inquiry-learned science?) when prospective science teachers work on pedagogical problems individually and as a team?"* an answer to the research question was sought. This study aims to determine how the stage of second-grade science preservice teachers at a university in eastern Turkey influences their comprehension of inquiry-based teaching.

Theoretical Framework

Inquiry-Based Teaching and Science Education

It is important for teachers to have the right content knowledge and to choose appropriate teaching approaches for students to teach science subjects permanently (Ramnarain & Schuster, 2014). PCK is considered an essential knowledge base for effective teaching of science subjects (Henze & Barendsen, 2019). Moreover, PCK represents specific knowledge about teaching specific content that teachers have and has developed over time (Bertram & Loughran, 2012; Coetzee et al., 2020). Students' interest in science is significantly related to the teacher's professional knowledge and the quality of teaching (Clarke & Fournillier, 2012). Dudu and Vhurumuku (2012) state that traditional science education has been heavily criticized for not including skills that represent the work of real scientists, such as making observations, collecting data, organizing, and making inferences. This situation has revealed the necessity of teaching approaches that encourage students to think at a higher level, solve problems, experience science practices, and make sense of the nature of science (NRC, 2012; Zhao et al., 2021). With this in mind, the inquiry-based teaching approach has been incorporated into international science education curricula (Akuma & Callaghan, 2019; Furtak et al., 2012). According to the Next Generation Science Standards (NGSS), questioning science involves formulating a question that can be answered through research, which is the foundation of scientific practice (NGSS Lead States, 2013). Inquiry-based teaching has been promoted in science classrooms to develop students' scientific thinking and problem-solving competencies (Gillies & Nichols, 2015; Pease & Kuhn, 2011). According to Areepattamannil (2012), the fundamental features of inquiry-based teaching include student teamwork, research, and access to scientific knowledge. Teachers can conduct inquiry-based teaching in harmony with different teaching methods using modern teaching practices (Furtak et al., 2012; Kuo et al., 2019; Marshall et al., 2017; Minner et al., 2010; Peters-Burton & Frazier, 2012). NRC (2000, 2012) stated that when children participate in inquiry science learning, they notice scientific problems, value evidence, evaluate and make appropriate decisions. Inquiry learning refers to the learning process in which students construct knowledge by interpreting scientific research results rather than transferring scientific knowledge directly from

teachers or textbooks (Lee et al., 2020; Lotter et al., 2018). With this approach, students are asked to ask questions; model development and use; plan and conduct research; analysis and interpretation of data; create descriptions; argue over the evidence; and be involved in acquiring, evaluating, and communicating information (Lotter & Miller, 2017; Zhang & Li, 2019). This process facilitates students' interaction with complex science ideas and participation in scientific activities (Gillies & Nichols, 2015; Harris & Rooks 2010; Wang, 2020; Zhang & Cobern, 2021). Situations in which teachers place more emphasis on students' active thinking and drawing conclusions from data contribute significantly to students' understanding of science content and development of attitudes compared to traditional passive approaches (Kang & Keinonen, 2018; Sadeh & Zion, 2012; Seung et al., 2014). NSES defined five key features of inquiry-based teaching as follows (National Research Council [NRC], 2000, s. 29):

1. Engaging in scientifically oriented questions,
2. Prioritizing evidence when answering questions,
3. Formulating explanations from evidence,
4. Linking explanations to scientific knowledge and
5. Communication and justification of disclosures.

Inquiry-based teaching presents students with real-life problems and teaches them the practical skills they will need to become productive citizens (Fitzgerald et al., 2019; Tseng et al., 2013; Zhang, 2016). define inquiry-based learning in science education to cover four levels (confirmatory inquiry-structured inquiry-guided-inquiry open inquiry). Martin-Hansen (2002) emphasizes that open inquiry, the most complex form, represents real scientists' work. Teachers play a critical role in teaching practices that facilitate learning (McLaughlin & MacFadden, 2014). Teachers should try to support the accuracy of students' scientific thinking and explanations by checking students' understanding (Colley & Windschitl, 2016; Kim, 2020; Kim, 2021; Tytler & Aranda, 2015). Science teachers' use of inquiry-based teaching approaches in their lessons will increase students' interest in science (Seung et al., 2014). To increase students' interest in the lesson, future science teachers should be familiar with inquiry-based science processes applied by scientists (McLaughlin & MacFadden, 2014; Walan et al., 2017).

There is a need for new assessment tools to evaluate the professional knowledge of science and preservice science teachers about inquiry-based teaching, which is today's contemporary teaching approach. In recent years, pedagogical problem scenarios have come to the fore in science teacher education studies (Cobern et al., 2014; Goodnough & Hung, 2009; Sizer et al., 2021; Skilling & Stylianides, 2020; Weizman et al., 2008). Pedagogical problem scenarios include a short teaching story that prospective teachers may encounter in any science lesson in the future. The use of pedagogical problem scenarios is very important. Because pedagogical problem scenarios are a way to catch the deficiencies and weaknesses in the professional knowledge structures of preservice science teachers during the preparation period, it is an opportunity for teacher educators to follow up and shape the current professional knowledge of prospective teachers when faced with such a situation. These pedagogical problems are also an effective way to reveal teachers' mental images of how to teach a particular science topic in a real classroom context. Pedagogical scenarios are used to reveal epistemic decisions that a teacher must make (consciously or unconsciously) in designing and implementing science teaching to teach scientific content on a particular subject (concepts, principles, relationships, and explanations), (Cobern et al., 2014). Schuster et al. (2006) explain several important purposes of pedagogical problems as follows: i) pedagogical problem scenarios are very realistic and original tools in revealing teachers' professional knowledge, ii) teachers or preservice science teachers working on problem scenarios related to such teaching cases serve to catch the deficiencies in existing professional knowledge schemes. In the related literature, the effects of science teachers and preservice teachers working as a team on pedagogical problem scenarios were determined by various studies. Among these studies, Hume and Berry (2011) conducted exploratory research based on teamwork to improve the professional knowledge of preservice science teachers. In this study, preservice teachers worked on CoRe forms in small teams to improve their professional knowledge and select appropriate teaching activities related to their students' learning about atomic structure and bonding. The research results revealed that including these preservice teachers in collaborative tasks had positive results in acquiring professional knowledge. El Nagdi, Leammukda, and Roehrig (2018) concluded that teachers' educational experiences could be positively affected by their interaction with their peers. Based on this result, they encouraged the team teaching model. In this model, teachers work together and can maintain the epistemological foundation of their discipline. In this study, researchers revealed that collaborative work is a very important theme that characterizes and develops a teacher professional identity. Professional collaboration between teachers or preservice science teachers may not always be beneficial, even if the effects are generally positive. Educational leaders today take a keen interest in engaging teachers in collaborative work for strategic reasons. However, these collaborative efforts go far beyond the professional goals and activities that teachers themselves can initiate. Therefore, the desired efficiency cannot always be obtained

(Andy Hargreaves, 2019). In this context, one of our research's main areas of interest was to test whether cooperative preservice teacher training is always effective.

Method

Research Design

The present research was conducted with the intertwined multi-case pattern of the case study. The intertwined multi-case pattern is a type of design in which more than one situation is studied by dividing it into separate sub-units, and then a comparison is made between the situations (Yin, 2003, s.40). Each case is divided into units. The results from these units allow for a comparison of situations (Yildirim & Simsek, 2008). In this study, the teaching preferences determined by the science teacher preservice science teachers studying in two different classes, individually and as a team, over different problem scenarios formed the intertwined situations of this research. The methodological design of the research is shown in Figure 1.

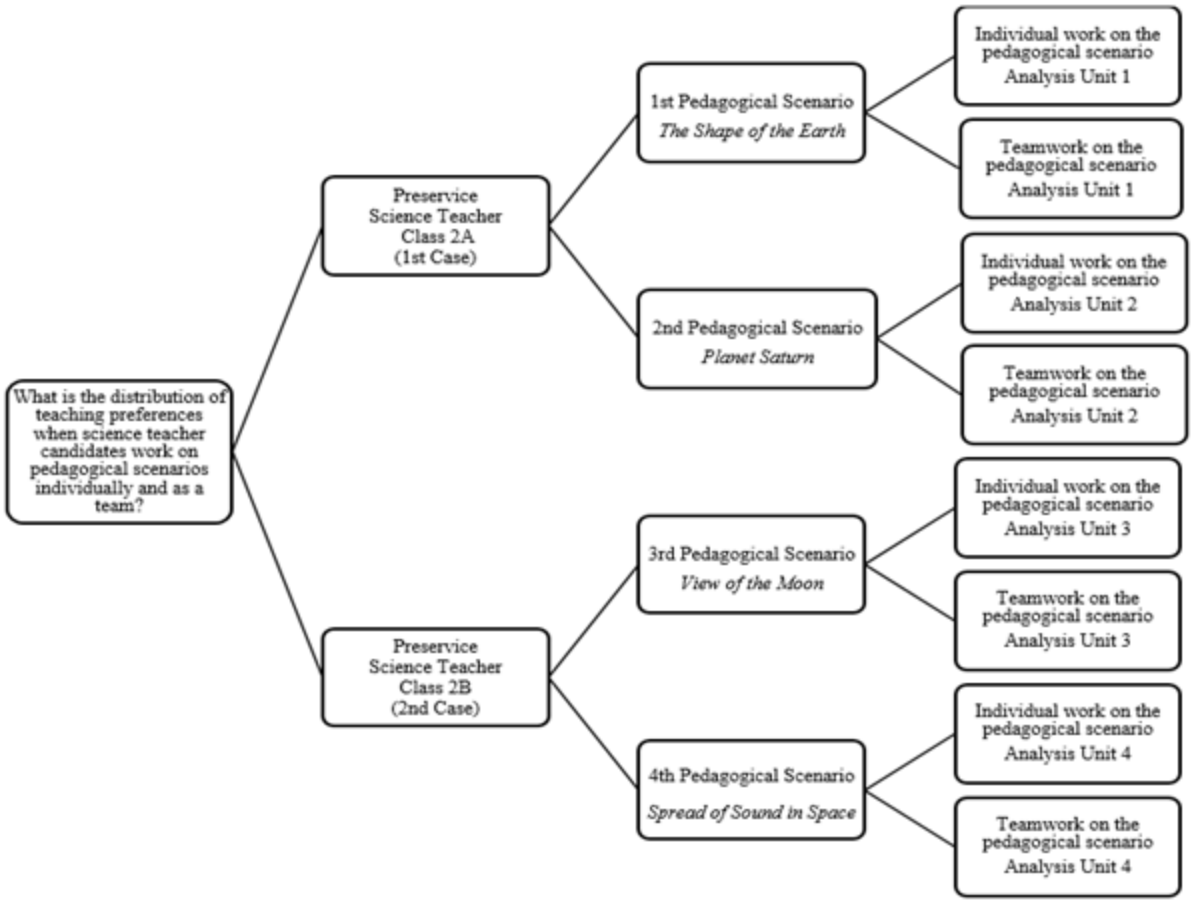

Figure 1. Intertwined multiple case design of the research

When Figure 1 is examined, it is seen that there are comparative situations in this study. Comparative case study research provides in-depth insights into processes, outcomes or relationships (Krehl & Weck, 2020). Comparative research is needed to inform those responsible for teacher education about alternative approaches. This research compares the teaching approaches that emerged as a result of the individual and teamwork of preservice teachers in solving problem scenarios related to teaching various science subjects.

Participants and Context

This study includes 69 second-grade preservice science teachers studying at a public university in Turkey (Class A: 35, Class B: 34). Preservice science teachers in both classes were divided into 14 teams by researchers.

Research teams are coded as T1, T2…T14. The ones coded as T12 in the text represent preservice science teacher number 2 of team number 1. T5 consisted of four preservice science teachers and the other teams consisted of five teacher preservice science teachers. T22 and T92 are foreign preservice science teachers. Preservice science teachers in the Classes A and B were randomly distributed by the relevant student affairs officer in the order of enrollment in the university. The preservice science teachers went through the same academic processes until the research was conducted. The research was conducted with second-grade preservice science teachers at the end of the fall semester because the preservice science teachers took the Principles and Methods of Teaching (PMT) course. The feature of this course is that it has the first professional knowledge course content that will affect the preservice science teachers' teaching pedagogy preferences. Preservice science teachers have previously taken the courses of introduction to educational sciences and educational psychology as professional knowledge course. However, these courses do not have course content that will directly affect the teaching pedagogy preferences of the preservice science teachers. The course content of the PMT course taken by the preservice science teachers is as follows:

> Basic concepts; teaching-learning principles, models, strategies, methods, and techniques; setting goals and objectives in teaching; content selection and editing; teaching materials; instructional planning and instructional plans; theory and approaches; effective school teaching, learning, and success in learning; evaluation of classroom learning (The Council of Higher Education, 2018, s.7)

Data Collection Tool

In the relevant literature, it is emphasized that working with pedagogical problems in the preparation of preservice science teachers can contribute significantly to their professional development (Cobern et al., 2014). The steps taken to identify and correct the current pedagogical deficiencies of the preservice science teachers through sample teaching scenarios are critical in helping them gain effective science teaching habits in the future. In this context, in the present study, the Teaching Pedagogy Preference Form (TPPF) was used to determine preservice science teachers' inquiry-based science teaching preferences. The inspiration for this form was Schuster et al. (2007) developed the Pedagogy of Science Teaching Test (POSTT). This test has been used in various studies (Cobern et al., 2013; Cobern et al., 2014; Feyzioglu et al., 2016; Ramnarain & Schuster, 2014; Schuster & Cobern, 2011; Schuster et al., 2012; Sahingoz & Cobern, 2018). Moreover, it is a handy measurement tool that is preferred to examine the orientation of teachers and prospective teachers in teaching science subjects. We adapted the POSTT from Cobern et al. (2014), Schuster et al. (2007), and Ramnarain & Schuster (2014). The POSTT is shown in Figure 2.

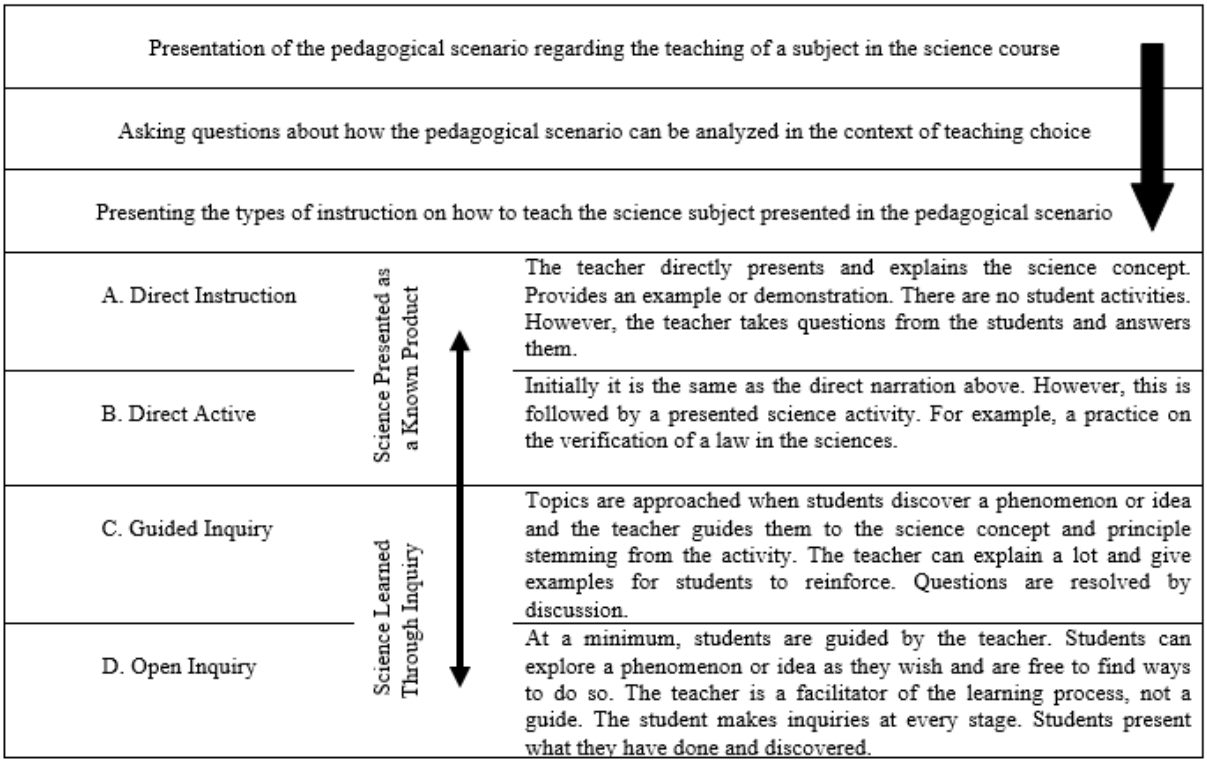

Figure 2. The design of each item of the POSTT (Adapted from Cobern et al., 2014; Ramnarain & Schuster, 2014; Schuster et al., 2007)

Schuster et al. (2007) ask for an explanation for each item in the POSTT design as to why teachers preferred the teaching approach they chose and why they did not choose other options. Rather than aiming to find the right or wrong option, this test presents different pedagogical options for teaching choices. After the problem scenarios are presented in the test, four various teaching preferences are presented in an elegant format, and the candidate chooses the one that best fits his or her needs. The aim here is to encourage the respondent to envision themselves in a particular teaching situation, to play the role of the decision maker, and respond accordingly (Cobern et al., 2014; Schuster et al., 2007). In the POSTT, there is a possibility that the multiple-choice presentation of the teaching preferences will lead the respondent. The TPPF prepared within the scope of this research has some differences from the existing POSTT. Each item of the TPPF, like the POSTT, contains a pedagogical problem scenario for teaching a specific science topic. In addition, as in the POSTT, this teaching scenario is followed by a section where preservice teachers are asked their opinions on how they can teach the expressed science subject. On the other hand, in TPPF, as in POSTT, there are no teaching approach options to reveal preservice science teachers' science teaching preferences.

We have prepared TPPF in four sciences: The shape of Earth, Planet Saturn, Moon Appearance, and Sound Propagation in Space. The form prepared on these subjects was applied to 24 students studying in the 3rd year of science teaching of the same faculty, where the main study was conducted, to confirm its validity before the study process. After this application, interviews were held with the preservice science teachers on the intelligibility and usefulness of TPPF. The form was sent to three faculty members from different universities, and their opinions were sought on both the pedagogical scenarios' suitability and the items' intelligibility. In this context, we gave the TPPF its final form by making some adjustments to the items in the form in line with the feedback of the 3rd-grade preservice science teachers and the suggestions of the faculty members. The data obtained as a result of applying the form to third-grade preservice science teachers were analyzed to ensure reliability. In this context, we created a scoring system for the teaching preference section in each item of TPPF, acting according to the logic in POSTT. Each question in the POSTT includes four different preferences Direct Instruction (DI), Direct Active (DA), Guided Inquiry (GI), and Open Inquiry (AI) instruction types. The answers to be written for the teaching preference section of each item in the form were scored as DI (1 point), DA (2 points), GI (3 points), and AI (4 points). In addition, "0" points were used in the meaningless answer and the teaching preference section that the preservice science teachers left blank. In this context, the researchers mutually scored the teaching preference answers regarding the "Shape of the World" item in the draft form of the TPPF applied to third-grade students. A good level of correlation was found between the scores given by the researchers ($r = .78$, $p < .05$). These results showed that the prepared TPPF is a valid and reliable tool for the main application. In the present study, TPPF consists of four different pedagogical scenario-type items, two for the Class A and two for the Class B. While answering the pedagogical scenarios, preservice teachers could choose as many different teaching pedagogy as they wanted. In this way, it is thought that it will be more reliable to reveal what kind of teaching pedagogy preferences are formed in the minds of preservice science teachers. Two different pedagogical scenarios are used in each class because the preservice science teachers can exchange information during the application. The designed pedagogical scenarios (PS) areas in Table 1:

Table 1. PS items in the TPPF

Class 2A	1st PS	*"A science teacher wants students to learn conceptual information about the shape of the world. During the lesson, one student said that the world was in the shape of a tray, and another said that it was in the shape of a cube. The teacher considers the most effective way to learn conceptual information about the subject. If you were in this teacher's place, what kind of teaching preferences would you suggest for learning conceptual information about the subject? Please explain in detail."*
	2nd PS	*"A science teacher wants students to learn conceptual information about planets and their properties. During the lesson, one of the students said, "If we leave Saturn in the water, will it sink?" posed a question. If you were in this teacher's place, what kind of teaching preferences would you suggest for learning conceptual information about the subject? Please explain in detail."*
Class 2B	3rd PS	*"A science teacher wants students to learn conceptual information about the movements of the Moon. During the lesson, one of the students asked, "Can we see all sides of the moon?" If you were in this teacher's place, what kind of teaching preferences would you suggest for learning conceptual information about the subject? Please explain in detail."*
	4th PS	*"A science teacher wants students to learn conceptual information about sound spread. During the lesson, a student said that sound can spread in space. This teacher considers the most effective way to learn conceptual information about the subject. If you were in this teacher's place, what kind of teaching preferences would you suggest for learning conceptual information about the subject? Please explain in detail."*

Each item in the TPPF begins with a pedagogical scenario representing a real teaching situation for a particular science subject. These scenarios contain sentences that emphasize the teaching purpose of the chosen science

topic (concepts and principles) and the way out of teaching this topic to students effectively. Then comes a sentence asking what kind of pedagogy they can teach the chosen science topic to the student.

For the questions in the interview forms used in the case studies to be understandable, the researchers make preliminary experiments and take the experts' opinions. The researchers of this study also conducted a pilot study on the content structure of TPPF. They sought the views of both third-year preservice teachers and science educators. Feedback from third-year preservice science teachers was on the text structure and intelligibility of pedagogical scenarios. Some of the preservice science teachers only commented on one or more of the four scenarios included in this feedback form. In line with the feedback given, the researchers made adjustments to the intelligibility of the texts in a way that would not disrupt the original structure of the POSST for all scenarios. For example, the 1st pedagogical scenario structure in the first draft form of TPPF and the feedback of some of the 3rd-grade preservice science teachers are as in Table 2.

Table 2. Feedback from preservice science teachers for the 1st pedagogical scenario

Draft 1st pedagogical scenario	Feedback
Are we on a tray? Gamze, who is a science teacher in a middle school, teaches the 6th grade students the subjects of astronomy and space unit in the 7th week. As the first lesson, teacher Gamze wants the students to understand what the shape of the Earth is like and the information that proves this correctly. Teacher Gamze thinks what would be the most effective approach to achieve this. If you were in place of teacher Gamze, what would be your suggestions regarding the teaching approaches that ensure that the students best understand this subject?   *Note: Explain the teaching approaches you will prefer by associating them with the information that proves the shape of the world.*	*I think the pictures can affect the preservice teacher's choices. Instead, it would be more accurate if only the paragraph should remain.* (preservice science teacher 5) *I think it would be better if a story could be written about the shape of the Earth in a way that highlights the problems in students' learning. Also, the expression of teacher Gamze constantly disrupts the flow of the text.* (preservice science teacher 16)

Examples of the feedback given by science educators are as in Table 3.

Table 3. Feedback from science educators for the 3rd pedagogical scenario

Draft 3rd pedagogical scenario	Feedback
Years later, teacher Fatih met his university friends Yılmaz and Kemal at a meeting. Each of these teachers worked as a science teacher in different schools. After the meeting, the three of them came together and started to talk about teaching science subjects. At the end of the lesson, teacher Fatih came to one of the students and said, "Does the whole moon look the same to us, teacher?" He said he asked a question. Teacher Fatih stated that he had studied the subject of the world and our planet in this class one lesson before and that he never thought such a question would come to the students' minds. Teacher Yılmaz said, "Now that I think about it, it is a really interesting question; how did you answer it? said. Teacher Kemal said, "While planning our lessons, I think we should be prepared for these questions and structure the science experiences in the classrooms that will enable students to find the answer to this question posed to my teacher Fatih." If you were the fourth teacher involved in this conversation, what would be your teaching advice to these teachers so that they could answer the above question?  Note: Explain the teaching approaches you will prefer by associating them with the information about the Moon.	*I would like to point out that there are some shortcomings. First of all, when I think about the pedagogical scenario logic in POSST, a section from a section in the course should be scripted. However, this question contains excerpts from the conversation in a free time outside of class. So the script reflects a real classroom context. Therefore, this situation needs to be reviewed in scenarios. It would be helpful if the scenario was simpler.* (science educator 1) *The feedback I thought to have when I reviewed the script is as follows: 1. The pedagogical text is too long as it is, it should definitely be shortened, 2. The scenario should have a pedagogical purpose by including a classroom context and teacher-student interaction in it, 3. I think the section given as a note at the bottom of the scenario is unnecessary.* (science educator 3)

The used version of the data collection tool after it was arranged in line with these views is given in Table 1.

Data Collection Process

The lecturer conducting the PMT course divided the course into three parts, each consisting of five weeks. In the first part, basic concepts, teaching-learning principles, models, strategies, methods, and techniques; setting goals and objectives in teaching; content selection and editing, in the second part, teaching materials; instructional planning and instructional plans; theories and approaches and in the last part; effective school teaching, learning and success in learning; evaluation of classroom learning. While teaching the course, the lecturer firstly directed the preservice science teachers to the questions that they should research and question about the acquisitions they should have related to the subject. The lecturer guided the preservice science teachers when they had difficulty in learning or researching but did not directly indicate the solution to the problem. Preservice science teachers presented what they learned about their achievements in the classroom environment. The information presented was discussed in the classroom environment, and the information obtained by the preservice science teachers was finalized with the suggestions of the lecturer. The inquiry-based teaching approach is covered in the second part. For example, in this section, the following problems related to inquiry-based teaching were given to the preservice science teachers:

1. What teaching pedagogies are based on direct instruction, directly active, guided, and open inquiry?
2. Create a separate lesson plan based on these teaching pedagogies.
3. A science teacher wants students to learn conceptual information about density. During the lesson, a student asked how hot air balloons fly. This teacher considers the most effective way to learn conceptual information about the subject. If you were in this teacher's place, what kind of teaching preferences would you suggest for learning conceptual information about the subject? Please explain in detail.
4. A science teacher wants students to learn conceptual information about physical-chemical change. During the lesson, a student asked how weight loss is a change. This teacher considers the most effective way to learn conceptual information about the subject. If you were in this teacher's place, what teaching preferences would you suggest for learning conceptual information about the subject? Please explain in detail.
5. A science teacher wants students to learn conceptual information about the particulate nature of matter. During the lesson, a student asked how the milk overflowed. This teacher considers the most effective way to learn conceptual information about the subject. If you were in this teacher's place, what teaching preferences would you suggest for learning conceptual information about the subject? Please explain in detail.

In this way, the course process was terminated. In this context, it is possible to say that the lecturer uses open inquiry-based teaching in his class. After the course process, 1st PS was first applied for the Class A. Preservice science teachers first wrote down the instructional pedagogies that they individually created in their minds. Sufficient time has been given to the preservice science teachers for this application. There was a 20-minute break after the application. Afterward, they worked in teams and discussed. Their work as a team lasted between 50-and 60 minutes. The same process was followed for the 2nd PS on a different day. The research process applied for Class A was repeated in Class B at different times. Individual and team practice times for Class B were approximately the same as for Class A.

Data Analysis

The answers given by the second-grade science teacher preservice science teachers to the pedagogical scenarios were analyzed according to their representation of the characteristics of the following instructional pedagogy preference types. The explanations in Table 4 are briefly summarized by adapting from the study of Sahingoz and Cobern (2018, p.1376).

Table 4. Teaching preferences and characteristics used in the analysis of the scenarios

Instructional Preference Type (category)	Features (cods)
DI	- The teacher presents the topic orally and explains - Students only listen to the teacher - Teacher gives examples within the scope of the subject - If students have questions, the teacher answers - Teacher asks questions
DA	- Teacher communicates information directly to the student - The teacher explains the topic with a presentation or example - The teacher does an activity to validate the information presented to the students. - Teacher provides limited active participation of students
GI	- It is ensured that the key concepts related to the subject are discovered through activities under the guidance of the teacher - Afterwards, a statement can be made on the subject - A discussion environment is created - The teacher provides the students with various activities to comprehend the desired information under his/her guidance - The teacher guides the students in the emergence of scientific concepts through various activities - The teacher gives more examples to reinforce the topic - The teacher maintains a learning environment where everyone shares the responsibility - Teacher makes students experience the processes of identifying and solving problems - The teacher creates the necessary environment for the students to use the materials and tools themselves and guides them.
OI	- Students can explore key concepts in any way they want - The teacher should have very little guidance on the subject. - Giving theoretical information about the science subject in the scenario - The teacher gives information to a minimum - Teacher facilitates the process that students determine to discover knowledge, does not participate actively in this process - Students are free to devise ways to explore an idea or phenomenon. - Students explore how the natural world works by following their interests - The teacher takes student interest into account - The teacher determines learning activities based on students' questions - Students explain and present the information they discovered in their scientific ways.
Meaningless Answer (MA)	- The answer given does not comply with the features as mentioned above - Irrelevant answers

In this study, the meaningless MA response category was included in addition to the teaching pedagogies used by Sahingoz and Cobern (2018). This category was added as it was felt during data analysis. Two researchers analyzed preservice teachers' teaching preferences at different times within the framework of the characteristics in Table 4. The results were then compared. In the study, the teaching preferences of preservice teachers working individually on teaching pedagogy scenarios were compared with the teaching preferences of preservice teachers working in teams. The obtained data were analyzed through content analysis. The code list for the teaching pedagogy of science teachers, which constitutes the conceptual basis of the research, was prepared (Cobern et al., 2014; Magnusson et. al., 1999). Strauss and Corbin (1990) state that the researchers' use of coding according to predetermined concepts while performing content analysis will provide a significant convenience in the analysis of data. The code list we created was later published by Schuster et al. (2007) examined four teaching approaches in the science teaching spectrum (Direct Instructor, Direct Active, Guided Inquiry, and Open Inquiry) and under the themes of "meaningless answer" that we identified. Also, another consideration in data analysis is that researchers are open to additional codes that emerge throughout the analysis, as they use a pre-formed coding scheme. Because Creswell (2013, p.185) emphasizes that using a pre-shaped code structure may limit the reflection of participants' views, so researchers should be open to additional codes throughout the analysis. Taking this matter into account, a reliable structure was created for the analysis of the data. While classifying the answers

of the preservice science teachers according to their teaching pedagogy, a complete agreement was sought among the researchers. A total of six responses that were not agreed upon emerged. Three different science educators coded these answers. The resulting classifications were compared and the teaching preference with higher frequency was chosen and reflected in the findings.

In the findings section, firstly, the frequency distributions (analysis units 1 and 2) of the teaching pedagogies preferred by the preservice science teachers in the Class A are presented to the reader in tabular form. Table 4 presents the total frequency values of DI, DA, GI, OI, and MA directed by preservice teachers in their team and individual work. Afterward, the percentage distribution of the types of teaching pedagogy preferred by the preservice science teachers (Case 1) is given. The values in the table were calculated as follows: first, the frequency values of each of the individual or team answers given by the preservice science teachers in the total direct tutorial/direct active/guided inquiry/open inquiry and meaningless answer categories were determined. Then, the ratio of the number of each teaching choice to the total number of answers was found and multiplied by one hundred. This way, the percentage of an item preference in the total number of responses was found and reflected in the tables. The same findings were presented in the data obtained from Class B (analysis unit 3, 4, and Case 2). The fact that this research, which was carried out with an intertwined multiple-case design consisting of two different situations and eight different units, required the data obtained to be transferred to the findings in this way. In this context, the science teaching preference distributions of the preservice teachers were obtained for each situation.

Results

The frequency distributions of the teaching pedagogy types preferred by the preservice science teachers in Class **A (Case 1) for the 1st and 2nd PS are presented in Table 5.**

Table 5. Frequency distributions of instructional pedagogy types for Case 1

Case 1	Answer Type	Analysis Unit 1						Analysis Unit 2					
		DI (f)	DA (f)	GI (f)	OI (f)	MA (f)	Total (f)	DI (f)	DA (f)	GI (f)	OI (f)	MA (f)	Total (f)
T1	Team	2	-	-	-	1	3	1	-	1	-	1	3
	Individual	8	-	1	-	7	16	2	-	-	-	9	11
T2	Team	2	1	-	-	1	4	1	1	-	-	2	4
	Individual	8	-	1	-	10	19	6	1	1	1	7	16
T3	Team	1	-	1	-	1	3	2	1	-	-	1	4
	Individual	9	-	2	-	6	17	4	5	-	-	6	15
T4	Team	2	1	-	-	-	3	-	1	-	-	1	2
	Individual	12	-	-	-	5	17	1	3	-	1	8	13
T5	Team	-	1	1	-	1	3	-	1	1	-	1	3
	Individual	4	2	-	1	2	9	1	3	1	-	5	10
T6	Team	2	2	-	-	-	4	-	1	-	-	2	3
	Individual	7	3	3	-	-	13	1	5	-	-	1	7
T7	Team	1	-	-	-	-	1	-	-	-	-	1	1
	Individual	8	1	-	-	6	15	3	1	-	-	4	8

When Table 5 is examined, it is seen that the teams did not choose teaching pedagogy for OI. However, it is noteworthy that individually, one preservice science teacher in the 1st PS and two preservice science teachers in the 2nd PS made an OI type of teaching preference. The total number of preferences for teaching pedagogy of the teams is close to each other in 1st PS (f=21) and 2nd PS (f=20). However, it is seen that the total number of preferences of the preservice science teachers individually in teaching pedagogies decreased in the 2nd PS (f=106 for the 1st PS, f=80 for the 2nd PS). Sample responses from the preservice science teachers are as in Table 6.

Table 6. Example responses for case 1

Preservice science teacher / Team	Example answer
It's one of T4's answers for the 1st PS. It has been evaluated in the DA category.	*"After explaining the subject to the students, the experiment can be done. For example, a spherical world model and a tray with a world map can be used. We give the student a toy car. We want him to move forward from the starting point and reach the starting point. Thus, it has to take a second path in the tray to return to its destination. In the sphere, there is no need for this. When it moves in the same direction on the sphere, it will return to the point where it started."*
It is one of T5's answers for the 2nd PS. It has been evaluated in the GI category.	*"Students can be divided into teams of five. The following questions are directed to the teams: 1- Observe the movement of the Sun throughout the day. What did you achieve? 2- Observe that the ship is coming from afar. What are your observations? The answers to these questions can be discussed in class. The teacher can correct the deficiencies or mistakes."*
It is one of $T1_1$'s answers for the 2nd PS. It has been evaluated in the DI category.	*"First, I tell students about Saturn. For example, I would say it is the second-largest planet and has a ring. I would say its density is smaller than Earth. I would say that the Earth is 70 percent water, while Saturn is mostly made up of gases. I would say that Saturn does not sink, just as ice does not sink in water."*

The findings obtained from the percentage distribution of the total number of preferences of the preservice science teachers studying in the Class A according to the types of teaching pedagogy are as in Table 6.

Table 7. Percentage distribution of preferred teaching pedagogies for Case 1

Case 1	Analysis Unit 1					Analysis Unit 2				
Answer Type	DI (%)	DA (%)	GI (%)	OI (%)	MA (%)	DI (%)	DA (%)	GI (%)	OI (%)	MA (%)
Team	47.6	23.8	9.5	-	19.1	20	25	10	-	45
Individual	52.8	5.7	6.7	0.9	33.9	22.5	22.5	2.5	2.5	50

When Table 7 is examined, it is seen that the DA, GI, and OI values of the number of preferences of the preservice science teachers according to the types of teaching pedagogy are close to each other for the 1st PS and 2nd PS. However, the preservice science teachers preferred more in the DI type in the 1st PS as a team. It is seen that they give more MA in the 2nd PS. When the preservice science teachers work as a team in 1st PS, it is seen that the number of preferences in DA and GI types increases according to their individual studies. It is noteworthy that when the preservice science teachers work as a team in the 2nd PS, the number of preferences in DA, GI, and MA types increases according to their individual studies. The frequency distributions of the types of teaching pedagogy preferred by the preservice science teachers in the 3rd PS and 4th PS in Class A (Case 2) are presented in Table 8.

Table 8. Frequency distributions of instructional pedagogy types for Case 2

Case 2	Answer Type	Analysis Unit 3						Analysis Unit 4					
		DI (f)	DA (f)	GI (f)	OI (f)	MA (f)	Total (f)	DI (f)	DA (f)	GI (f)	OI(f)	MA (f)	Total (f)
T8	Team	-	1	-	-	-	1	1	1	-	-	-	2
	Individual	-	1	-	-	7	8	-	3	-	-	3	6
T9	Team	1	1	-	-	1	3	-	2	-	-	-	2
	Individual	1	1	-	-	6	8	2	3	-	-	5	10
T10	Team	1	-	-	1	-	2	-	1	-	1	-	2
	Individual	7	1	1	1	4	14	3	4	1	2	3	13
T11	Team	1	-	1	-	-	2	-	2	1	-	-	3
	Individual	6	2	3	-	-	11	2	3	-	-	3	8
T12	Team	-	1	-	-	-	1	-	1	-	-	-	1
	Individual	1	2	1	-	2	6	1	5	-	-	1	7
T13	Team	2	-	-	-	-	2	1	-	1	-	-	2
	Individual	2	2	-	-	2	6	5	-	-	-	1	6
T14	Team	1	2	-	-	1	4	1	1	-	-	1	3
	Individual	5	3	-	-	1	9	6	4	1	-	2	13

When Table 8 is examined, it is seen that only T10 and the preservice science teachers belonging to the team made a preference for OI. The total number of preferences in the teaching pedagogies of the teams is equal in PS 3 and PS 4 (f=15). It is seen that the number of preferences of the preservice science teachers according to their individual teaching pedagogies (f=62 for the 3rd PS, f=63 for the 4th PS) is close to each other. Sample responses from preservice science teachers are presented in Table 9.

Table 9. Sample responses for Case 2

Preservice science teacher / Team	Example answer
It is $T13_3$'s only response for the 3rd PS. It has been evaluated in the MA category.	*"I would talk about the moon's phases and how the moon goes around the earth. I would explain the subject broadly."*
It is one of T10's answers for the 4th PS. It has been evaluated in the OI category.	*"We test their prior knowledge by asking questions such as "What is sound? In which media does sound spread?". We collect the answers given by the students. We question on what basis they give such answers. Then we ask them to research relevant questions and find their answers. We ask them to compare their preliminary information with the information they obtained at the research's end."*

The findings obtained from the percentage distribution of the total number of preferences of the preservice science teachers studying in Class B according to the types of teaching pedagogy are as in Table 10.

Table 10. Percentage distribution of preferred teaching pedagogies for Case 2

Case 2	Analysis Unit 3					Analysis Unit 4				
Answer Type	DI (%)	DA (%)	GI (%)	OI (%)	MA (%)	DI (%)	DA (%)	GI (%)	OI (%)	MA (%)
Team	40	33.3	6.7	6.7	13.3	20	53.3	13.3	6.7	6.7
Individual	35.5	19.3	8.1	1.6	35.5	30.2	34.9	3.2	3.2	28.5

When Table 10 is examined, it is seen that the preservice science teachers in the Class B mostly preferred the DI type in the 3rd PS and the DA type in the 4th PS as a team. Preservice science teachers individually focused on their DI and MA teaching preferences in the 3rd PS. In the 4th PS, it is noteworthy that the preservice science teachers mostly focused on the DA teaching preference. When the preservice science teachers work as a team in the 3rd PS, it is seen that the number of preferences in DI and DA types increases according to their individual studies. It is noteworthy that when the preservice science teachers work as a team at the 4th PS, the number of preferences increases in the DA, GI, and OI teaching pedagogy types compared to their individual studies.

Discussion

The purpose of this study was to investigate the preferred teaching pedagogies of second-grade preservice science teachers through individual and group work. According to the findings of the study, preservice science instructors favoured DI and DA instructional pedagogies over GI and OI. Preservice science teachers' working individually or as a team affected their teaching pedagogy choices. Working in teams increased the choice of DI teaching pedagogy while reducing the percentage of MA they provided. The teamwork of preservice science teachers mostly increased the percentage of choosing GI teaching pedagogy. However, the rate of preservice science teachers (individual or team) generally preferring this teaching pedagogy is low. The teamwork of the preservice science teachers decreased the OI teaching pedagogy choice in Case 1 and increased it in Case 2. It is noteworthy that as the science topics in the pedagogical scenarios faced by the preservice science teachers change, the type of teaching pedagogy they prefer also changes. Sahingoz and Cobern (2018) revealed that the teaching preferences of science teachers vary according to the subject. In this study, teachers may have preferred different types of teaching, taking into account the difficulty and nature of the subject. However, in the current study, it is seen that the preservice science teachers mostly concentrate on DI and DA teaching pedagogies and MA giving. Solving the encountered problem scenarios correctly depends on the team's ongoing scientific discussions (Nutt, 2008; Steele et al., 2007). Therefore, the preservice science teachers may not have been able to produce inquiry-based teaching ideas within the scope of solving pedagogical scenarios because they could not carry out teamwork effectively. Preservice science teachers are expected to produce inquiry-based teaching ideas because the currently used science course curriculum recommends using this teaching preference. Another cause for the current research findings could be the lack of preservice science teachers' professional knowledge and skills. Ramnarain and Schuster (2014) found that physics teachers in regions with a good economic situation in South Africa use GI

orientation, and physics teachers in regions with poor economic situations use DA orientation. Teachers using DA orientation attributed the reason for this choice to crowded classrooms and students' inability to obtain resources. On the other hand, teachers using GI orientation associated their teaching preferences with school culture, parent expectations, and teachers' professional competence. It was in 2005 that Turkey started to use the constructivist approach in science lessons. The compulsory inclusion of the research questioning strategy in the science curriculum took place in 2018. The prospective teachers who participated in the current research completed the primary and secondary school processes in the revision processes of this program. Therefore, they experienced learning environments in which DA and DI teaching preferences were made in the classrooms. They may have reflected DA and DI teaching preferences in the activities they designed by being influenced by these learning environments. Kang and Keinonen (2018) state that Finnish science teachers prefer GI more when their 2006 PISA results are taken into account, and they are less likely to use the practice of OI and discussion. They explain the reason for this situation as teachers are not equipped with sufficient professional knowledge during their candidacy or service period. This explanation supports the result of our current research. Lee et al. (2020) emphasize that for teachers to use inquiry teaching, they must have confidence that this pedagogy positively impacts teaching science concepts. This may be one of the reasons why preservice science teachers in the present study were poor in choosing teaching pedagogies based on GI and OI. In order to reveal this situation scientifically, different studies are required in which interviews will be conducted. If science teachers are needed to choose and implement instructional pedagogies based on GI and OI, they must be equipped with the requisite professional knowledge throughout their candidacy (Luft et al., 2008). Seung et al. (2014) emphasizes that it is not sufficient to provide preservice teachers with only theoretical information on inquiry-based science teaching, and it is necessary to have discussions on exemplary practices. The result of this research was considered, and discussions were carried out on sample activities while conducting the relevant course. Despite this educational process, it is seen that the preservice science teachers do not focus enough on inquiry-based teaching. It is possible to say that the duration of the education given within the research framework is insufficient. Wang (2020) designed a training program to provide inquiry-based pedagogical instruction to prospective science teachers. As a result of this study, it was emphasized that science educators should be able to correctly convey inquiry-based pedagogical instruction so that preservice science teachers can construct it correctly. In addition, Wang (2020) also stated that science educators should be trained for inquiry-based teaching. The result of Wang's (2020) research, Seung et al. (2014) is in line with the research result and the current research result. As a result of the related research, another reason why preservice science teacher tend to choose DI and DA teaching may also be due to the teachers they have taken as role models. Because the education system in Turkey started to adopt the research-inquiry teaching strategy in 2013. The preservice teachers in which the research was conducted were mostly exposed to the training of teachers based on direct instruction until the university. Therefore, the observations of the preservice science teachers so far may have prevented them from adopting an education process for inquiry-based teaching. To summarize, it may have adversely affected the new professional knowledge of the preservice science teachers that they will acquire prior knowledge about the profession. This situation can be investigated with qualitative studies based on interviews. However, in order to solve this issue, study should begin at the start of the candidacy training. Internship courses can also help science instructors and preservice science teachers choose inquiry-based teaching pedagogies. Lederman and Lederman, 2019; Faikhamta et al., 2018). The internship course in the first year was eliminated with the redesign of the scientific teaching undergraduate program in Turkey in 2007. This change removed opportunities for preservice science teachers to observe inquiry-based classrooms. As a result, one may argue that this environment makes it difficult for preservice science teachers to gain professional expertise regarding inquiry-based teaching.

Conclusion

When presented with pedagogical scenarios, second-grade preservice science teachers prefer DI and DA teaching pedagogies both individually and in teams. The preservice science teachers tended to give the correct answer from DI to DA and MA when the subject shifted, while generating answers to the educational scenarios they experienced in both individual and group work. One criticism of science teacher education in Turkey is that it does not provide instructors with the support they require to develop novel teaching methods.

Recommendations

The findings of the study can be used as teaching material in teacher education classes. These findings are interpreted using qualitative data. Working with additional preservice science teachers allows for comparative investigations. It is advised that science professors and educators focus on more notable and diverse instances. Science teacher educators must either update their inquiry-based professional expertise or seek training. Education officials can expand the number of internship courses to lengthen relevant course durations and boost the

professional competence of preservice science teachers. This proposal is especially significant in terms of allowing students to apply or observe the professional information they have learned in school.

Limitations

This study was conducted with a limited number of preservice science teachers who were at the beginning of their education at a university. Interviews could have been used to substantiate the results. More pedagogical scenarios on different topics could have been used.

Conflict of Interest

The authors declare that there is no conflict of interest.

Author (s) Contribution Rate

Each of the authors contributed equally to this work.

Ethical Approval

Ethics committee approval was received for this study from Kafkas University Social and Human Sciences Ethics Committee (Date: 19.10.2020, No: 43).

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Teacher Education Reimagined: A Letter to Teacher Educators on Preparing Teachers to Educate Refugee Students

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Teacher Education Reimagined: A Letter to Teacher Educators on Preparing Teachers to Educate Refugee Students

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Abstract

Turkey is currently home to the world's largest refugee population, with more than 3.7 million Syrians and around 322,000 refugees and asylum-seekers of other nationalities under international protection. Situated in a theory of teacher education for social justice, the current study aims to illustrate the lessons and insights that teacher educators, who are critically engaged in preparing teachers to teach immigrant and refugee students, offer in reimagining preservice teacher education to prepare prospective teachers to teach *all* students, including refugee children. The study employed phenomenological research to investigate the perspectives and the lived experiences of 18 teacher educators who were purposefully selected through criterion, maximum variation, and snowball sampling strategies. The data were collected through semi-structured in-depth interviews with the participants. The findings revealed three key issues for a socially just teacher education system: "who should teach: teacher educator identities", "teacher education curriculum and pedagogy", and "contexts, structures, and collaborators in teacher education". As a letter to educational stakeholders in general and to teacher educators specifically, the present study issues a call to action to revisit our roles and rethink the education of massive numbers of refugee students in Turkey and around the globe to advocate for and enact social justice in and through teacher education.

Keywords: Refugees, Social justice education, Teacher education, Preservice teacher education, Teacher educators

Introduction

The United Nations Refugee Agency [UNHCR] (2020) reports that 82.4 million people were forcibly displaced worldwide at the end of 2020. Among them, approximately 26.4 million are particularly refugees, half of whom are children. In addition to the forcibly displaced refugee populations, almost a million children were also born as refugees from 2018 to 2020 (UNHCR, 2021a). Given these numbers, the global refugee population has more than doubled especially in the past decade. Furthermore, as the most recent Russia-Ukraine crisis has created one of the biggest refugee crises with 6.3 million refugees having been forced to flee Ukraine, we are again globally reminded that the number of people forcibly displaced around the world has been continuing to grow at an alarming rate (UNHCR, 2022b).

Particularly, over 25% of the refugee population in the world are part of the 10-year Syrian crisis, which has been the world's largest refugee crisis in decades as nearly 6.6 million Syrians have been forced to flee their homes since 2011, seeking safety as refugees in the neighboring countries such as Turkey, or displaced inside Syria (UNHCR, 2021b). Within this context, Turkey has indeed a special place as it currently accommodates the world's largest refugee population with more than 3.7 million Syrians under temporary protection and around 322,000 refugees and asylum-seekers, predominantly from Iraq, Afghanistan, and Iran under international protection (UNHCR, 2022a). In addition, Turkey hosts thousands of citizens of other countries, such as Pakistan, Moldova, Palestine, Myanmar, and Georgia, as irregular migrants (Presidency of Migration Management, 2022). Making up the largest refugee population in the country, the presence of Syrians in Turkey was initially considered "temporary". Although historically, Turkey's refugee regime only included the settlement of Turkish-origin refugees, the protracted nature of the war in Syria remarkably changed the immigration policies in Turkey (Çelik & İçduygu, 2018), and in 2014, the Law on Foreigners and International Protection granted Syrians a legal status under temporary protection (Directorate General of Migration Management [DGMM], 2014).

While Syrian children initially attended temporary education centers where they were taught by Syrian teachers based on Syrian national curriculum and received education in the Arabic language, public schools have become

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accessible to refugees since 2014. Thus, the number of Syrian students in public schools has increased dramatically. Furthermore, efforts to integrate Syrian refugees into Turkish society increased significantly with the implementation of the EU-Turkey Refugee Agreement in 2016, which was implemented to end irregular migration from Turkey to the EU in exchange for 3 billion euros in EU aid and the assertion of visa liberation for Turkish citizens (European Council, 2016). Hence, starting in August 2016, the Ministry of National Education (MoNE) launched the Inclusive Education Initiative in collaboration with UNICEF and mandated the integration of Syrian children in the public schooling system. Consequently, 1.27 million Syrian refugees in Turkey are currently children and nearly 140,000 children are refugees and asylum seekers of other nationalities. Specifically, with the start of the 2021-2022 school year, the number of refugee students enrolled in formal education in public schools reached 854,839 in pre-K-12 education in eighty-one provinces across Turkey (UNICEF, 2022).

Given that a significant number of refugees (almost one-third of them) are school-aged (5–18), supporting them to have access to quality education remains a major challenge for host countries, including Turkey (Gümüş, Kurnaz, Eşici, & Gümüş, 2020). The most critical challenge especially pertains to addressing the urgent question of how to prepare and recruit teachers who can respond to the educational needs of refugee students and educate *all* children. To illustrate, UNHCR (2021a) highlights that enrolling 300,000 additional students requires recruiting nearly 10,000 additional teachers each year. As a result, as classrooms become more socio-culturally diverse, particularly with the inclusion of refugee students, we are all called upon to examine and re-imagine teacher education policies and practices in order to address the urgent question of how to prepare future teachers who can meet the educational needs of *all* children in Turkey and beyond.

The Professional Needs of Teachers in Turkey in the Context of Refugee Students

The dramatic influx of refugee students into Turkish schools has accelerated empirical research and scholarship on refugee students' education in Turkish public schools. While a significant portion of this research examined the problems and barriers faced by refugee students and their families, a recent body of literature has also reflected a particular interest in the experiences of teachers of refugee students, illuminating teachers' professional development needs to educate refugee students. In a review of 52 journal articles published in Turkey between 2015 through 2019, the most common challenges for teachers were found to be their lack of ability to communicate with refugee students and their parents, as well as their lack of collaboration with refugee parents due to perceived language barriers, lack of access to relevant instructional materials, lack of knowledge and skills to meet the psychological needs of students resulting from multiple issues such as war, migration, and economic difficulties, and deficit-based conceptions of immigrants and refugees (Goodwin, McDevitt, Lee, & Akin-Sabuncu, in press). In addition, the study reported that teachers could not build on what students bring to school with them as they could not adjust the curriculum according to the needs of immigrant and refugee students, they did not have the autonomy to employ alternative assessment and evaluation techniques in a high-stake testing climate, and did not consider those students' culture as strengths in schooling (Goodwin et al., in press).

A more recent body of research illuminating teachers' experiences and professional needs has also been evolving. For example, Demir-Başaran (2021) focused on the class and school-wide experiences of teachers working with Syrian refugee students and found that teachers did not find themselves competent to provide refugee students with quality inclusive education although affection for children was the main source of their professional motivation. The challenges teachers encountered specifically centered on curriculum, learning-teaching process, instructional tools, and assessment. Atalay, Kilic, Anilan, Anilan, and Anagun (2022) investigated the problems faced particularly by primary teachers who teach Syrian students. The results of the study highlighted that the primary barrier for teachers to educating refugee students was related to the language difference between themselves and refugee students. It was reported that the perceived language barrier was also critical, leading to immense emotional pressure on teachers.

In their study, Karsli-Calamak and Kilinc (2021) examined the early childhood teachers' experiences to educate Syrian refugee students within the context of inclusive education by drawing on Fraser's three-dimensional social justice framework. The study found that teachers' practices included both inclusion-oriented and exclusion-oriented actions concerning the redistribution, recognition, and representation dimensions of Fraser's social justice framework, which offered a window into inclusive education for imagining new ways of supporting refugee students and their teachers. Kotluk and Aydin (2021) used culturally relevant and sustaining pedagogy as a theoretical lens to examine the challenges teachers faced while trying to implement the principles of this pedagogy. The findings of the study showed that teachers had low expectations of academic achievement from refugee students and designed the teaching-learning process exclusively by considering the perspectives of students from the mainstream culture. In addition, teachers' attempts to develop the cultural competencies and raise the socio-political consciousness of the Syrian students were limited mainly due to lack of knowledge and

skills resulting from insufficient teacher preparation. Among the other sources of teachers' perceived challenges to teach refugee students, as Ereş (2016) underscores, is the lack of educational policy and long-term planning for the successful integration of refugee students into the Turkish education system as the study reported that teachers were not prepared to educate immigrant and refugee students from diverse backgrounds. Adopting culturally responsive pedagogy to investigate teachers' experiences and practices related to the education of refugee students in their classrooms, Soylu, Kaysılı, and Sever (2020) further concluded that teachers, indeed, had more of a deficit-based approach to the existence of refugees in the country as well as to their inclusion in the Turkish education system; and therefore, largely focused on systematic problems, rather than rethinking the individual approaches that they could implement.

As pointed out by these studies, teachers in Turkey have been confronted with multifaceted challenges that stress the complexity of working with refugee students and their families. Although teacher education researchers have demonstrated their commitment to investigating the issues that refugee children and their teachers face, the voices of teacher educators are remarkably missing from their endeavors. Currently, there is silence on the perspectives and experiences of teacher educators regarding the preparation of teachers who can teach all students including refugee children. This silence may lead to the perpetuation of deficit-based portrayals, characterizing refugee students as others, deprived, and deficient (Baak, 2019; Goodwin et al., in press; Hummelstedt, Holm, Sahlström, & Zilliacus, 2021; Lee, Akin-Sabuncu, Goodwin, & McDevitt, 2021). In this context, this research is among the first studies which explore teacher educators' perspectives on preparing future teachers in the context of refugee education from a theoretical standpoint. Specifically, grounded in Cochran-Smith's (2010) theory of teacher education for social justice, the present study aims to illustrate the lessons and insights that teacher educators, who are critically engaged in preparing teachers to teach immigrant and refugee students, provide for teacher education and teacher educators to produce transformative and collaborative pedagogies. Accordingly, the current study offers a letter to teacher educators in Turkey and beyond calling for an action to break the silence of teacher education on educating refugee students by highlighting how teacher education can and should be reimagined to create equitable and socially just schooling around the world.

Theoretical Framework: Teacher Education for Social Justice

To conceptualize the perspectives of teacher educators and provide insights into the preparation of teachers who can meet the educational needs of refugee students, this study draws on Cochran-Smith's theory of teacher education for social justice (Cochran-Smith, 2010) which aims to "challenge the educational status quo and be transformative" to "support teaching and learning practices that foster justice" (p. 458). The overarching goal of the theory of teacher education for social justice is to "promote students' learning and enhancing their life chances" (p. 461); however, applying these ideas to teacher education is a complex issue given that social justice is a widespread but vague concept (Chang et al., 2019; Cochran-Smith, 2020; Cochran-Smith et al., 2009).

Despite the large variation in how the term "social justice" is used in teacher education, a central idea for a socially just teacher education is that it implicitly or explicitly draws on a distributive notion of justice in an effort to improve students' learning and advance their life chances by challenging the inequities of school and society (Cochran-Smith, 1995, 1999, 2010). This perspective acknowledges that there are significant disparities in the distribution of educational opportunities and the educational outcomes between minority students and their counterparts. Accordingly, it positions teachers as those who "can and should be both educators and advocates who are committed to the democratic ideal and to diminishing existing inequities in school and society by helping to redistribute educational opportunities" (Cochran-Smith et al., 2009, p. 350). Building on these, the main intention of socially just preservice teacher education is to provide future teachers with the social, intellectual, and organizational contexts that prepare them to teach for social justice in K-12 educational settings, as opposed to "just good teaching" (Cochran-Smith et al., 2009, p. 373). This particularly requires intertwining a theory of justice, a theory of teaching and learning practice, and a theory of teacher preparation. Based on those three knowledge bases, the central question in a theory of teacher education for social justice is: "How can we conceptualize teacher preparation intended to prepare teachers to engage in practice that enhances justice?" (Cochran-Smith, 2010, p. 458).

This question particularly relates to empowering minoritized and marginalized students of different backgrounds, classes, cultures, gender, ability, and race, by questioning what counts as knowledge and who decides what knowledge counts, whose interests are served through education, and whose perspectives are represented (Cochran-Smith, 2020; Cochran-Smith, Gleeson, & Mitchell, 2010). To that end, three key ideas are essentially at the heart of a theory of justice for teacher education, integrated with one another: equity of learning opportunity, respect for social groups, and acknowledging and dealing with tensions. First, equity of learning opportunity relates to challenging the mainstream classroom and societal practices, policies, beliefs, and assumptions that

perpetuate inequities towards promoting equity of educational opportunities and outcomes for *all* students, including refugee students. Second, respect for social groups highlights the critical role of recognizing all social/racial/cultural groups, including refugee populations, by actively working against the institutionalized obstacles of schooling and society that aggravate these groups' oppression. It also requires one to actively work for the effective use of the ways of knowing of marginalized individuals. Lastly, a theory of teacher education for social justice also concerns acknowledging and dealing with tensions and contradictions resulting from competing agendas about the nature of justice and responding to them in concrete ways (Cochran-Smith, 2010). Based on these ideas, Cochran-Smith (2010) suggests that teacher education must be theorized with respect to four key issues: (1) who should teach, (2) teacher education curriculum and pedagogy, (3) contexts, structures, and collaborators in teaching, and (4) outcomes.

First, the issue of which teachers are recruited is of critical importance for diversifying the teaching force with respect to cultural, racial, and linguistic backgrounds and recruiting teachers whose beliefs, values, and experiences are aligned with social justice goals. Second, a teacher education curriculum that enhances justice needs to provide teacher candidates with the opportunity to learn about the subject matter, pedagogy, culture, language, the contexts of schooling, and the purposes of education, but it also must recognize what is left out in the curriculum along the lines of race, class, culture, and language backgrounds. Third, how and from/with whom teacher candidates learn and the contexts and structures surrounding learning is another issue that is central to any theory of teacher education. From the perspective of social justice, the purpose of partnerships with schools is not that teacher candidates try to learn the good practices of expert teachers, but it is rather to provide prospective teachers with the opportunity to work with experienced mentors and collaborate with parents, families, and community groups in inquiry communities, from whom they can learn about teaching that fosters equity and social justice. Lastly, concerning the educational outcomes, teacher education that enhances social justice rejects standardized tests as the only measure of students' academic success or the effectiveness of teacher education programs. Rather, with the goal of challenging inequities, it seeks to ensure that *all* students have enriched opportunities to learn, are prepared to participate in a democratic society, are committed to social justice goals, and retain as social justice educators in their careers Cochran-Smith (2010).

Accordingly, this study builds upon Cochran-Smith's theory of teacher education for social justice and interrogates these key issues to illustrate the ways in which teacher educators, who are engaged in preparing teachers who can teach immigrant and refugee students, suggest for teacher education to produce transformative and collaborative pedagogies. To explore how teacher education can be re-envisioned to prepare future teachers who can enact teacher education for social justice for refugee (and immigrant) students, the study specifically asks the following question: Using social justice as a lens, what insights do teacher educators offer on reimagining preservice teacher education for preparing prospective teachers to teach refugee students?

Methods

Research Design

The study used phenomenological research as it seeks to portray the common or shared experiences in the lived experiences of several individuals regarding the phenomenon of interest (Creswell, 2013; Marshall & Rossman, 2011). While phenomenological studies assume that the same phenomenon can be experienced and interpreted in multiple ways by different individuals (Merriam, 2014), they also acknowledge that there is a common essence in the perceptions and shared experiences of several individuals (Creswell, 2013; Patton, 1990). Accordingly, the present study employed phenomenological research to investigate teacher educators' perspectives and lived experiences about preparing prospective teachers to teach refugee students by uncovering the commonalities or the shared essence in their lived experiences.

Participants

The participants of the study included 18 teacher educators who were selected purposefully through criterion, maximum variation, and snowball sampling strategies (Patton, 1990). First, the use of criterion sampling helped ensure that the teacher educators chosen were those whose research interests and experiences centered on preparing teachers to teach immigrant and refugee students. Thus, employing criterion sampling, the study included the participants who were likely to be information-rich concerning the preparation of teachers to educate refugee students (Patton, 1990). The study also utilized maximum variation sampling as the participants were selected by considering their titles, fields of study, and the institutions/universities (public vs. private) they work at. This sampling method contributed to the richness of the results as representing a variation based on these variables offered a deeper insight into the experiences of teacher educators who have different backgrounds and

thereby, might have different experiences regarding the preparation of prospective teachers to teach refugee students. Lastly, by utilizing snowball sampling in the participant selection process, each participant was asked to recommend other potential teacher educators who would be information-rich regarding the issue and contribute to the enrichment of the findings. The demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic characteristics of the participants

Participant	Gender	University	Title	Personal background as an immigrant
Mine	Female	Public	Assistant Professor	Yes
Zehra	Female	Private	Associate Professor	No
Ece	Female	Public	Assistant Professor	Yes
Serdar	Male	Public	Professor	No
Orhan	Male	Public	Associate Professor	No
Ali	Male	Public	Associate Professor	Yes
Feray	Female	Public	Assistant Professor	Yes
Tamer	Male	Public	Associate Professor	No
Pelin	Female	Public	Professor	No
Emel	Female	Public	Assistant Professor	No
Baran	Male	Public	Associate Professor	Yes
Salih	Male	Public	Professor	No
Mehmet	Male	Private	Assistant Professor	Yes
Suna	Female	Private	Assistant Professor	No
Oya	Female	Private	Assistant Professor	No
Aysel	Female	Public	Associate Professor	Yes
Beril	Female	Public	Assistant Professor	No
Tuna	Male	Public	Assistant Professor	No

Data Collection Procedure and Analysis

The data were collected through semi-structured in-depth interviews with the teacher educators as interviews are the main data collection tools in phenomenological research (Marshall & Rossman, 2011). Interviews are particularly suggested in phenomenological research since they yield rich descriptive information about individuals' perspectives and experiences on the phenomenon of interest from their own frame of reference (Bogdan & Biklen, 2007) and help elicit the deeper meanings attached to them (Patton, 1990). To this end, a semi-structured self-developed interview schedule was used, which consisted of both demographical and open-ended questions. The demographical questions included participants' gender, ethnicity, the languages they speak, their research areas or interests, and academic/teacher education background such as their education degrees, title, field of study, the university they currently work at, and their teaching experience. In addition to the demographical questions, the interview schedule consisted of six main open-ended questions that are supported with probes and prompts (e.g., What are some understandings, principles, or goals you have for your student teachers in relation to educating refugee students? Can you give an example of how you teach these understanding/principles/goals? What challenges/affordances do you have in preparing teachers to teach refugee students?). The data were collected over six months, from July to December 2021. In response to the COVID-19 pandemic, each individual

interview was conducted online and took 45-55 minutes. Based on the participants' permission, all interviews were audio-recorded and transcribed verbatim.

The data were analyzed by content analysis, which entailed an inductive (Bogdan & Biklen, 2007; Patton, 1990) open coding approach (Maxwell, 2013). In addition, a deductive approach was followed based on the key tenets of Cochran-Smith's theory of teacher education for social justice. To that end, the data were first aggregated into smaller codes by reading the transcripts word by word and assigning certain labels to them (Miles & Huberman, 1994), which were then used to derive larger categories (Bogdan & Biklen, 2007). Lastly, the categories were collapsed into the tenets of the theoretical framework that the study drew upon. The data analysis was performed using NVivo 10. First, the researcher coded a set of three transcripts and created an initial code list, which was then revised and refined with the suggestions of two experts who also contributed to the coding of the same transcripts. This process afforded the consistency of the codes and categories derived by the researcher (Marshall & Rossman, 2011; Miles & Huberman, 1994). In reporting the findings, sample quotations were selected in participants' own words to illustrate the findings. The anonymity of the participants was established using pseudonyms.

To ensure the trustworthiness of the study, different strategies were used based on the recommendations of Lincoln and Guba (1985) and Marshall and Rossman (2011). In particular, the opinions of two experts were taken on the interview schedule and a pilot study was conducted with three teacher educators before the main data collection, both of which contributed to the credibility of the study. Moreover, in-depth interviews allowed for a deeper dialogue between the participants and the researcher. As explained in the data analysis, establishing intercoder reliability helped ensure a consensus between the researcher and the two independent coders. Furthermore, referential adequacy was established by presenting sample quotations from the participants. To enhance transferability, purposeful sampling strategies were used. Additionally, a thick description of the overall research process was provided by presenting a detailed account of all the processes related to the selection of the research design and participants, data collection, and data analysis.

Researcher Positionality

Our personal and professional experiences with refugee students necessarily mediate our interpretations of the data. Accordingly, the researcher's diverse and firsthand professional experiences with immigrant and refugee students as a teacher educator in Turkey and as a postdoctoral researcher and a visiting associate professor in the United States have led her believe that refugee students have several assets and strengths that teachers could draw upon not only in pre-K-12 education, but also in teacher education to promote liberating pedagogies and practices, that is frequently neglected by existing research. Therefore, along with her scholarly interests and research on teacher education, teaching for social justice, and immigrant and refugee education, the researcher's positionality as a social justice-oriented educator played a significant role in this study in developing a desire for supporting refugee children and their teachers by examining the insights that teacher educators, who are critically engaged in preparing teachers to teach refugee students, could provide into teacher education research, policy, and practice.

Findings

The findings of the study are organized around the three key issues addressed in Cochran-Smith's (2010) theory of teacher education for social justice: "who should teach", "teacher education curriculum and pedagogy", and "contexts, structures, and collaborators". While the participants mainly discussed these three key issues to prepare teachers who can educate refugee students, they did not address the "outcomes" tenet of socially just preservice teacher education. Therefore, to provide an in-depth examination of teacher educators' responses, the present study focuses on the first three issues that are central to a socially just teacher education system. It is also important to note that the participants' articulations focused on teacher educator identities, instead of teachers, concerning the first tenet of "who should teach". Hence, the first tenet of the theory of teacher education for social justice has been re-conceptualized in this study to portray and shed light into the identities of teacher educators. The study illustrates examples of the prevalent themes to contextualize the findings.

Who Should Teach: Teacher Educator Identities

According to the findings of the study, the participants highlighted that teacher educators have a critical responsibility to ensure that prospective teachers are provided with the opportunities and tools necessary to educate all students and foster social justice education. In the context of refugee education, they elaborated that teacher educators' orientations toward developing and enhancing a socially just teacher education system are

significantly influenced by their beliefs, attitudes, and dispositions regarding refugee populations, as well as their culture and prior experiences with those communities. To illustrate, Zehra said:

> *…The neighborhood where I grew up was populated with internal and external migrants. I grew up in an environment where people from all ethnic backgrounds and different socioeconomic levels lived together peacefully. Even though those social groups lived in harmony, the inequities and the disadvantages that certain groups faced were a phenomenon that I observed and remembered from my childhood, which bothered me even when I was a little child.*

Like Zehra, all participants shared their personal stories and backgrounds to explain how the specific context they were born into or lived in for a significant time allowed them to develop positive attitudes, empathy, and understanding towards disadvantaged minority groups. In addition, some participants connected to their own identities as a minority in the country's larger socio-political context, especially with respect to their ethnicity and mother tongue. For instance, Tamer expressed:

> *I'm from Erzurum [a city in the Eastern Anatolia region]. Perhaps because I am of minority background alongside my ethnicity and mother tongue, and also since I am recognizant of the fact that I was part of a minority culture that was assimilated into the dominant culture, I'm more sensitive about developing equitable educational opportunities for all students regardless of their nationality, ethnic or linguistic backgrounds, or socio-economic status. As a teacher educator and human, my goal is to spread and flourish values of tolerance, democracy, and social justice in and through education.*

Thus, participants, like Tamer, explained how the experience of belonging to a minority group raised their awareness of the marginalized student populations and helped them develop critical consciousness about the issues of oppression and the urgent need for achieving equity and social justice in and through education. Furthermore, specifically concerning the education of refugee students, some participants made connections to their immigrant backgrounds themselves due to family ties. To illustrate, Feray said:

> *…When I was very young, we lived in Germany during my early childhood years. It probably has a strong influence on me. …My primary school experiences an immigrant child in Germany and my family's experiences abroad shaped my worldview and enabled me to develop a scholarly interest in the issues of educational equity and social justice education for all students but especially for immigrant and refugee students… Being an immigrant child in Germany has always been a big part of my identity and probably has a significant effect on my research interests.*

As seen in Feray's explanation, the participants who had immigrant backgrounds (although they were not in a refugee situation) have first-hand experience of what it means to be a "guest" outside the national border. Thus, those participants especially reflected on their past educational experiences and emphasized how it feels to be "invisible" in the curriculum. In addition to personal and family backgrounds, many participants also talked about their experiences of living across national borders due to educational or professional backgrounds and addressed its impact on their professional identity as a teacher educator. For example, Salih explained:

> *I completed my undergraduate education in a large public university in Ankara [capital city of Turkey]. Because the university I studied at was home to many students who came from different cities and held different worldviews, such cultural diversity greatly impacted my personal and professional identity. …Then, I went to the U.S. to pursue my master's and doctoral education. As I was exposed to even greater ethnic, linguistic, and cultural diversity in the U.S over the time I spent there and took several courses related to equity, diversity, and multicultural education, my educational and professional experiences became more diversified and enriched, and consequently led to the development of my current professional identity today that interweaves the issues of equity, diversity, and social justice education, with a special focus on immigrant and refugee education in the most recent years.*

Hence, as a person with an immigrant background and/or due to educational/professional reasons, the participating teacher educators, like Salih, acknowledged that their lived experiences in a different country significantly influenced their views, research interests, and beliefs about the role of education. As a result, this strongly connected them to researching and educating teachers to teach immigrant and refugee students with a commitment to ending inequalities and addressing the needs of marginalized students due to systemic inequalities. These findings demonstrate that teacher educators constructed the issue of preparing teachers to teach culturally and linguistically diverse refugee students by considering and connecting personal experiences and knowledge. Reflection and the resulting awareness of one's practices, perspectives, and background can impact teacher

educators' understandings of their sense of self and help them consider how they co-exist with others across educational contexts. This awareness may ultimately push teacher educators to reconsider their roles and revitalize their approaches to teaching prospective teachers (Cochran-Smith, 2010).

Teacher Education Curriculum and Pedagogy

The findings showed that the participants often examined the teacher education curriculum, pedagogy, and policies for overt and hidden messages that include or exclude the preparation of teachers to teach students with minority backgrounds, such as refugee children. Accordingly, they criticized that issues around equity, social justice, and minority groups, including refugee students, are deemphasized in the teacher education curriculum. Thus, all participants called for reflective, transformative, and progressive approaches and pedagogies that challenge technical efficiency models and encourage prospective teachers as agents of change who are committed to providing high-quality education for all students, including refugee students, alongside social justice values. To that end, rather than examining traditional texts, the participants, for example, reconsidered the purpose of their classes and aimed to engage teacher candidates in larger socio-political issues, such as education of refugee children, that extended beyond developing technical knowledge and skills of teaching to developing their socio-political awareness. For instance, Emel expressed:

> *My primary goal is to help them [teacher candidates] understand how existing inequalities are perpetuated through education and schooling. The school conveys certain messages to students every day about where they are in the social hierarchy. …Thus, I aim to help future teachers question the role of education, develop a critical awareness of the immigrant and refugee students whom they might have in their future classrooms, and develop empathy, tolerance, respect, and understanding for those students.*

In transforming the teacher education curriculum, the participants, like Emel, reconsidered the goals and principles of their classes and, above all, worked to ensure that the curriculum developed the critical thinking skills of future teachers. In so doing, they further aimed to enact the curriculum in ways that did not reflect deficit-based thinking or biases against refugee students or reinforce systems of domination against those populations, but rather challenged oppressive social, political, and economical structures and empowered a socially just and inclusive education for *all*. On the other hand, the participants criticized the very centralized structure of teacher education curricula and the lack of appropriate courses related to refugee education; and therefore, called for new courses that address the issues of refugee education, immigrant education, multicultural education, and social justice education to prepare teachers who are equipped with essential knowledge, skills, attitudes, and asset-based mindsets to teach immigrant and refugee students. To illustrate, Serdar articulated:

> *One of the biggest problems in Turkey is that teacher education curricula are highly centralized and controlled by the Council of Higher Education (CHE). As a result, there is almost no course in the program where we can include topics around diversity, migration, immigration, and refugee education. Our teacher education programs are merely focused on developing teacher candidates' knowledge and skills to effectively use teaching methods and strategies or assessment techniques. We spend a lot of time on such technical aspects of teaching. My intention is not to say that these are not important; however, first of all, we must work to help teacher candidates gain a broader vision and awareness about the purpose of education, which means that we must urgently revitalize our teacher education curricula and offer courses where we can have intended critical discussions about immigrant and refugee students and change the lives of those oppressed populations.*

By highlighting the crucial need for teacher education programs to include courses that can create dialogue and open space for discussing the multifaceted aspects of immigrant and refugee education, Serdar, like other participants, further believed that if teacher education can first achieve raising student teachers' awareness about immigrant and refugee students, the prospective teachers can then find their own way to choose the appropriate teaching methods and materials and develop their assessment tools to design and implement individualized education tailored to the needs of immigrant and refugee children. Thus, on the path towards developing a teacher education system that fosters social justice, the participants essentially highlighted the need for a social justice mission, philosophy, and mindset development in teacher education programs, which is to be infused consistently into several components of the program such as the conceptual frameworks, program descriptions, course content, and course syllabi.

In addition to an explicit social justice mission and related curriculum content, the participants mentioned that there was also a need for liberating, emancipating, engaging, and empowering pedagogies in teacher education

programs to raise teachers for social justice. Accordingly, the participants drew on their own practices and suggested integrating current events, news, case studies, videos, educational movies, drama, art and poetry, guest speakers, field trips, and community service projects into teacher education programs as powerful tools and pedagogies to create space for critical reflection and exploration of alternative ways of thinking and counternarratives. They articulated that such pedagogies encouraged student teachers' engagement in broader socio-political issues and helped them recognize the systemic injustices surrounding refugee students. For instance, Aysel said:

> *…First and foremost, they [teacher candidates] need to be able to question the social, economic, political, and educational inequities that refugee students face every day. This is not as easy as teaching a technical skill, like teaching a grammatical rule, on which our teacher education programs mostly focus. Rather, they need to develop critical mindsets to be able to analyze the power relations among different social groups including refugee students as the oppressed vs. their oppressors. …So, to help them [teacher candidates] raise critical consciousness about and develop advocacy for the education of those [refugee] students, I often use case studies, videos, and educational movies to make prospective teachers think about refugee communities and their children. I also aim to connect those discussions to their [teacher candidates'] identities and past experiences to encourage them reflect on those events …So, to help them start enacting change and ultimately transform their future classes, I usually ask teacher candidates to develop such lesson plans in which they need to consider appropriate pedagogies and materials to meet the needs of refugee students.*

Hence, as seen in Aysel's explanation, teacher educators criticized the highly technocratic nature of teacher education that draws on old approaches and focuses only on developing skill sets, and rather suggested to use pedagogies that are conducive to foster a transformative teacher identity blended with critical thinking and reflection, activism, and advocacy for social justice.

Context, Structures, and Collaborators in Teacher Education

Teacher education focused on social justice is not an isolated entity or it does not exist in a vacuum. It requires "a coherent and intellectual approach to the preparation of future teachers" (Cochran-Smith, 2010, p. 447), one that situates education and schooling within broader socio-political and historical contexts instead of focusing simply on a repertoire of instructional methods and activities. Accordingly, the participating teacher educators emphasized the importance of taking an inquiry stance into the problems related to the immediate context of schools and the larger social, political, and cultural issues in society. To that end, they suggested that teacher education institutions should develop partnerships in communities that are committed to social justice where teacher educators, prospective teachers, experienced mentor teachers, parents, and families can work in collaboration to co-construct knowledge and raise critical questions about educational issues and dilemmas. This, in return, would help teacher candidates reconsider and challenge their assumptions and beliefs about teaching, learning, students, curriculum, assessment, and existing schooling practices that perpetuate educational inequities surrounding the education of refugee students. Embedded in this perspective, the participants underscored the importance of collective efforts over the individual efforts and stated that such partnerships, contexts, and community immersion provide a unique space and opportunity for all parties to take collective responsibility and action towards the larger issues related to social justice, equity, and social change, as well as to adopt social justice identities. For example, Suna mentioned:

> *…In community service practices course, I intentionally chose schools where the number of refugee students is high. By collaborating with their mentor teachers, teacher candidates developed projects to foster the education of refugee students in those schools particularly. So, I think developing partnerships with schools and places where teacher candidates can engage in the education of immigrant and refugee students is highly critical if we, as teacher educators, want to prepare them for the realities and changing demographics of schools. In these environments, teacher candidates get authentic opportunities to engage in critical conversations, observe and reflect on the educational inequities, and collaborate with key actors to learn how to respond to the educational needs of those students, which we do not provide in campus environments as teacher education has always been, and indeed, is becoming more theoretical in the past years.*

Therefore, like Suna, teacher educators sought to find alternative ways, such as implementing community-based inquiry projects, community service projects, and field placements, to provide teacher candidates with particular local contexts as they believed that social justice education and equity cannot be fully achieved outside of such contexts, which also reflected a common criticism against the structure and content of teacher education in Turkey

that prioritizes theory over practice. In this regard, the participants further stated that putting equity and social justice at the center of teacher education means that prospective teachers should learn to work with diverse students, and develop appropriate practices tailored to particular needs, contexts, cultures, and histories of refugee students, which essentially requires an inquiry-based process that is linked to constructing local knowledge and partnerships to address the larger educational issues, as opposed to focusing only on the technical aspects and decontextualized facts and principles of teaching in the university settings.

In addition to developing partnerships with schools and local communities, the participants also highlighted the importance of developing collaboration with other teacher educators. To that end, especially stressing the social, political, and economic issues in the current climate of the country and the climate surrounding teacher education, they specifically suggested that teacher educators should collaborate to develop research partnerships that address the needs of refugee students as well as their parents and teachers through an in-depth longitudinal exploration and empower them by means of transformative interventional studies. To illustrate, Oya and Serdar explained:

> *Instead of conducting research on those communities and students individually, I think we need to design interdisciplinary interventional studies by collaborating with our colleagues in different fields. To that end, we also need to shift from concentrating on the problems of those students or teachers alone to see the strengths that immigrant and refugee students bring to the classroom. …So, one of the best ways to empower those students and their teachers is to develop long term research partnerships with them, in which we can design and enact practices that would support them. …This is important because although universities seem liberal from outside, especially education faculties have a very conservative structure and mindset reflecting the general context of the country. Thus, such partnerships among teacher educators might be critical to create an inclusive organizational climate and commitment to social justice education at the institutional level. (Oya)*

> *…Universities must be pioneers. That is, rather than blaming the Ministry of National Education or the Council of Higher Education, we must first reflect on ourselves and take the responsibility to develop and advocate for necessary teacher education policies and practices to prepare teachers who can work with immigrant and refugee students. Beyond anyone or any institution, this is firstly our job. We must work together to produce knowledge, philosophy, and practice that can foster those students' education. Yet, we are far from there as we either keep ignoring those realities due to socio-political or individual reasons, or only do low-impact research that is usually for our own professional benefit and mostly done individually. (Serdar)*

As seen in Oya's and Serdar's explanations that are also coupled with criticisms against the current mainstream atmosphere of teacher education, the participants further mentioned that this joint effort and research collaboration might consequently be useful to challenge and reform the mainstream organizational culture of the teacher education institutions to substantiate their impact and contribution to improving the educational outcomes of immigrant and refugee students in K-12 settings.

Discussion, Conclusion, and Recommendations

Over the last decades, concerns related to preparing quality teachers have been heightened nationally and globally. Particularly, there has been a myriad of perspectives about how teacher quality should be characterized including what knowledge, skills, and dispositions teachers should have as each perspective reflects larger political agendas and assumptions regarding the purposes of education (Cochran-Smith et al., 2009). In the midst of all this intensified attention to quality teacher preparation, one major criticism is that debates around teacher quality and teacher education solely focus on science-based solutions to educational problems and only promote a technical view of teaching and a teacher training model that neglect and do not serve the needs of minoritized students (Cochran-Smith, 2020) such as refugee students. Thus, this study explored the perspectives of teacher educators, who are critically engaged in preparing future teachers to teach immigrant and refugee students, and found chief lessons and insights for a socially just teacher education that are related to (a) teacher educator identities, (b) teacher education curriculum and pedagogy, and (c) the context, structures, and collaborators in teacher education.

First, the findings suggest that teacher educators have a critical role in preparing preservice teachers to recognize and challenge educational inequalities that refugee students face resulting from various economic, social, cultural, and political factors. In this regard, the participating teacher educators especially made several connections to their personal and educational/professional backgrounds, identities, and experiences in working to support the education of immigrant and refugee students. Thus, the findings of this study contribute to the broader research on teacher educator identity and professional development, as well as the recruitment of teacher educators to

urgently address the issue of preparing future teachers who can work effectively with immigrant and refugee students. In order to learn to teach in an increasingly culturally and linguistically diverse society with tremendous numbers of refugee students, teacher candidates and teacher educators should have enriched opportunities to examine the relationships between language, culture, and power in education. This investigation inevitably starts with one's own history and cultural, racial, and linguistic backgrounds as a human being and as an educator to realize the assumptions and generalizations we make about other children, such as refugee children, whom we perceive as different (Cochran-Smith, 2004). Within this framework, given that teacher educators are at the core of teacher education and have a strong impact on the professional development of prospective teachers (Izadinia, 2014; Loughran, 2006), the study, therefore, draws on the impact of teacher educators' personal backgrounds and educational/professional experiences on their mindsets, pedagogies, and practices and primarily offers insights into attracting and supporting teacher educators who are critically minded, committed to equity and social justice education, and advocates for the education of *all* students, including refugee children, through transformative and liberatory pedagogies, practices, and research. To that end, the study also offers implications for diversifying the teacher educator profile in terms of cultural, ethnic, and linguistic backgrounds and recruiting teacher educators whose beliefs, motivations, experiences, and values are congruent with social justice goals. Moreover, the study highlights the need for teacher educator preparation as teachers of teachers and supporting their continual professional development for social justice to raise future teachers who can respond to the educational needs of immigrant and refugee children especially considering that there is no curriculum for the preparation of teacher educators (Dinkelman, Margolis, & Sikkenga, 2006) and they must prepare prospective teachers for classrooms teacher educators themselves may not have experienced.

Second, teacher education for social justice re-envisions teacher education as transformative and collaborative to dismantle the inequities that minoritized refugee students experience in education and schooling. Accordingly, rather than a traditional theory of practice that prioritizes subject matter knowledge and teaching skills in preservice teacher education, the findings of the study suggest that a theory of practice congruent with social justice holds that teachers should be prepared through transformative curriculum and pedagogies that enable them to analyze and interpret what is happening in schools and classrooms with special attention to be devoted to the education of refugee students so as to recognize whose interests are served vs. whose voices are not heard. That is, from the perspective of social justice, teaching does not simply concern practical issues such as how, when, and where teachers do things, but it rather blends knowledge, interpretive frameworks, teaching methods and skills, and advocacy. Thus, rather than focusing primarily on credentialing purposes and sequence of courses, Cochran-Smith (2010) suggests that teacher education curriculum that advances social justice must include opportunities for candidates to learn about "subject matter, pedagogy, culture, language, the social and cultural contexts of schooling, and the purposes of education" (p. 459) to become conscious of who is left out or nurtured in the curriculum and what is implicitly or explicitly determined as the norm in discourses related to students, parents, pedagogies, and experiences. Therefore, in addition to what strategies and methods teachers use, teaching for social justice also involves what teachers believe, what they recognize as the purposes of education, how they understand their work and its larger connections to the educational issues, how they work against inequities, how they set expectations for various learners, and how they build the curriculum upon the knowledge and experiences of marginalized students (Enterline, Cochran-Smith, Ludlow, & Mitescu, 2008) including refugee children.

Within this context, the findings of the study clearly suggest that teacher education curriculum and pedagogies should be designed in ways (e.g., integrating case studies, videos and educational movies, critical reflection, and storytelling) (Korthagen, 2016) that provide a critical space for *all* educational stakeholders, including teacher educators, teacher candidates, families, communities, and policymakers. This would foster dialogue, critical reflection, and collaboration among all by means of a collective and organized effort to dismantle the inequities surrounding the education of refugee students. To that end, third, the study especially highlights the need for teacher education to develop critical partnerships with schools and local communities where student teachers can have authentic opportunities and engage in critical field practices (Chubbuck & Zembylas; Korthagen, 2016), especially focusing on refugee children, to advocate and enact social justice education through critically observing and taking an action against the issues and barriers that refugee students encounter. Another critical insight that deserves highlighting is that teacher education programs, above all, must be designed around social justice principles based on a clear and coherent social justice mission, goal, and philosophy that deliberately foster social justice education as opposed to add-on efforts and fragmented structure of programs (McDonald & Zeichner, 2009). As pointed out by the participants, only then, teacher education can extend beyond abstract conceptualizations of social justice and start enacting a social justice education through consistent tools, pedagogies, and practices (e.g., field practices, employed pedagogies) that would collectively make a difference in the lives of refugee children.

Lastly, the findings of the present study highlight teacher education research as a fundamental instrument for socially just teacher education. Specifically, the findings suggest that researching the education of refugee students requires collaboration among teacher educators in creating more spaces for discussions on refugee students and designing and reimagining research to embrace refugee students and create socially just schooling for all students. To that end, more research should be framed within a social justice framework, especially through longitudinal and more comprehensive studies in local, national, and global contexts.

Ultimately, based on the findings from the published scholarship, the collective experiences of the participating teacher educators provide insights into and guide much-needed transformative directions toward justice in teacher education. As a letter to all educational stakeholders in general and teacher educators specifically, the present study issues a call to action to revisit our roles and rethink the education of massive numbers of refugee students in Turkey and around the globe to advocate for and enact social justice in and through teacher education. Lastly, even though this research is one of the first studies conducted with teacher educators within the teacher education context of Turkey, the limitations of the study should be considered while interpreting the results. As the current study only relies on the interviews conducted with the participating teacher educators, it is recommended that future research should also include observations of teacher educators' practices to portray what plays out in the actual implementation of teacher education programs particularly pertaining to the preparation of teachers to educate refugee students and foster social justice education. In addition, to triangulate the interview data, further research might also include document analysis to examine teacher education curricula, course descriptions, and course syllabi in detail. In so doing, further research focusing on the experiences of the teacher educators who have been teaching refugee students (preservice teachers) in teacher education programs is also recommended to explore their unique experiences and to more fully portray the prevailing teacher education policies and practices concerning the education of refugee students through the lens of social justice education.

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Conflicts of Interest

No potential conflict of interest was declared with respect to the research, authorship, and/or publication of this article.

Ethical Approval

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Teachers' Views on the Communication Skills of School Administrators: A Mixed Method Research

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Teachers' Views on the Communication Skills of School Administrators: A Mixed Method Research

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Abstract

The purpose of the present study was to determine teachers' views on the communication skills of school administrators through a mixed methods design. Although quantitative or qualitative studies deal with the communication skills of school principals according to teacher perceptions, the number of studies conducted in mixed design is quite low. The study's quantitative data were obtained from 368, and the qualitative data were obtained from 20 teachers working in primary, secondary, and high schools in Acıpayam and Tavas districts of Denizli province in Turkey. The data were collected via the "Interpersonal Communication Skills Scale of Primary School Administrators" developed by Şahin (2007) and through an interview form developed by the researchers. For the quantitative data analysis, arithmetic mean, standard deviation, t-test and one-way analysis of variance were applied as a content analysis were carried out in the qualitative data analysis. When the results were examined, it was observed that the communication skills of the school administrators were at a high level, and it was revealed that their communication skills were at the highest level in the dimension of "giving confidence", while it was at the lowest level in the dimension of "giving feedback". There are significant differences in school administrators' communication skill levels considering the branch's variables, teachers' tenure at school, school type, and the number of teachers. It has been seen that the quantitative and qualitative data of the research support each other.

Keywords: Teacher, School administrator, Communication skills, Communication barriers

Introduction

Today, social networking sites such as Facebook, My Space, and LinkedIn; Social media applications such as Instagram and Twitter are used by most people. Many people either have one of these applications on their phones, computers, or tablets or have subscriptions to social networking sites. One of the relationship status options for individuals on Facebook is "complicated". This simple phrase actually defines today's world and our lives. Our beliefs about our relationships, families, work, politics, and ourselves are complicated. In organizations, this complexity is even more pronounced.Beyond any doubt, the organizational world is much more complicated than a hundred years ago (agriculture, increased industrialization, and the birth of the assembly line), fifty years ago (moving to the suburbs, long-term employment, and when fathers thought to know the best), or even twenty years ago (cross-functional work teams, the early years of the internet and glass ceiling break). The complexity of the organizational world has also affected organizational communication, and it has brought along various processes such as socialization, decision making, conflict management, management of emotions, and management of differences to help cope with the complexity that emerged (Miller, 2012). Today, it can be said that these processes undoubtedly affect managers the most in organizations. In addition to these processes, managers are also faced with an environment where communication problems get more complicated each day.

Because they play a key role in ensuring the effective flow of information and the development of harmonious relationships in the organization, managers have an essential communicative role. They spend most of their time interacting with employees. Executive monitoring studies have revealed that more than 60 percent of managers' working time is spent in scheduled and unscheduled meetings, approximately 25 percent is spent on paperwork, 7 percent is on the phone, and 3 percent is on the go (Dickson, Hargie, & Tourish, 2004).

The research suggests that according to the employees, an organization's culture is 70% determined by managers. It is sufficient to look at the manager to see the energy and motivation levels of the people in an organization and

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to find out where the desired or undesired behaviours in that organization originate from. . In educational organizations, how school administrators communicate what has to be done is as important as what they accomplish (Türkmenoğlu, 2019), and it is evident that good communication is the way to do this. It all starts with people's need for communication to ensure the continuity of their lives and to maintain their relationships . It would not be wrong to say that communication is very important in treating people as social rather than biological beings. Since the human being is defined as an entity that carries out social relationships through communication, it can be said that the term communication has also emerged in line with human history. Cave paintings from the first humans or the communication of the Indians with smoke can be given as an example of this. There are numerous definitions of communication. All definitions concur that communication is an information exchange based on psychology. The process of communication's primary goal is to influence and be influenced by others. The concept of "interaction" that these two concepts directly evoke also means mutual action and influencing each other (Güven, 2013). The word "communication" is derived from the Latin word "communis", which means common. In the Turkish Language Association dictionary, communication is defined as conveying feelings, thoughts or information in any way possible (TDK, 2020).

The process of communication involves the exchange of information between the source and the receiver (Lunenburg & Ornstein, 2012). The information between the sender and the recipient, referred to as the message, is another component of communication. A channel facilitates the transfer of the message between the source and the receiver. The message sent from the source to the receiver comes back similarly. This is the feedback process. There are four basic elements of communication: source (transmitter, sender), message, channel and receiver (destination). The complement of these four basic elements is called feedback. (Güven, 2013). In the literature, there are opinions stating that communication elements consist of three, four, or five basic elements. While Can (2005) talked about the three basic elements of communication, Gürel and Gürüz (2008) stated that communication consists of five basic elements. Although it is indicated as basic or complementary in the literature, it is seen that communication elements are named similarly. Therefore, the basic communication elements can be listed as a source, message, channel, and receiver. Apart from these, four communication processes complete the communication process and provide the relationship among these basic elements. These are encoding (encryption), decoding (interpretation), feedback (behaviour), and noise (Kaya, 2019; Tanrıöğen, 2018; Yüksel, 2019).

Communication skills are defined as learned behaviours that enable an individual to listen effectively with respect and empathy, to open himself by speaking concretely, to communicate his feelings and thoughts with his language without hiding anything, to protect his rights without humiliating others, to use verbal and nonverbal messages harmoniously, to establish satisfactory relationships with others, to get positive reactions and to help the individual to live in a society. To establish good and effective communication, the individual must sincerely respect himself and others, empathize, ensure active listening, speak concretely, reveal himself, use the "I language," send a complete and one message, act transparently (unmasked), use verbal and non-verbal messages in harmony and display an empathic and trustworthy behaviour (Yüksel-Şahin, 2019).

When people understand all the elements involved in the communication process, they can improve their and others' communication. Therefore, communication skills are, at their core, leadership skills. It directs you to access how you can manage the communication between you and someone else or a group so you can reach your goals and results (McPheat, 2010).

Communication is also at the center of educational organizations. Administrators communicate with teachers, teachers with students, and students with each other. There are many varied ways of communication. But it is also the source of many problems that arise in schools. A critical area of interest is the communication between administrators and their teachers. Their ability to communicate effectively cannot be ignored as they are key players involved in the normal day-to-day operations of a school (Rowicki,1999). What principals and teachers talk about and how they communicate reflect and structure what is considered important in different processes and activities. Therefore, communication also reveals what is focused on in the organization's day-to-day work (Ärlestig, 2008).

Communication skill in educational organizations is one of the most important elements in developing the teaching profession. Managers with high communication skills can help organizations improve their existing human resources, effectively cope with environmental forces, and increase employees' job satisfaction (Hamidi, & Barati, 2011). When the literature is examined; communication skills and performance (Kambeya,2008; Ndidi, & Alike, 2018), teachers' positive emotional change (Berkovich, & Eyal, 2018), school culture (Mohamed, & Abidin, 2021; Şimşek, 2003), job satisfaction (Supriadi , & Mutrophin, 2017), teachers' organizational

socialization (Saylık, & Hazar, 2021), teacher motivation (Doğan, & Koçak, 2014), conflict management (Nural, Ada, & Çolak, 2012; Şahin, 2007) were found to be positively correlated.

As can be seen, effective communication plays a vital role in achieving the goals of schools. However, some factors prevent the realization of communication in the effectiveness of a communication process (Lunenburg, & Ornstein, 2012). These factors, which are called communication barriers, can be listed as psychological barriers, cultural barriers, semantic barriers, environmental barriers, mechanical barriers, stylistic barriers, didactic-methodical barriers, structure, and quality of the message, status and roles, protection area, hierarchy, sleep, limitation and lack of feedback (Geçikli, 2010). Kaya (2019) stated that there are many barriers to communication and classified these into two; constructive and disruptive. Moreover; he also stated that people might encounter obstacles due to their unawareness of their communication needs, inability to adequately grasp the importance of communication, and ignorance of effective communication methods.

Purpose of the Study and Research Questions

Kambeya (2008) stated in her study that when principals demonstrate good interpersonal communication skills, teachers are motivated to put forth more than 100% effort. Teachers' perceptions of their principals showed themselves in their efforts to do their jobs. Recognizing school administrators' communication skills is hugely important in improving these skills. The present study aims to contribute to the development of the communication skills of school administrators and to help prevent communication barriers between school administrators and other stakeholders in the school. If administrators recognize how teachers perceive their communication skills, they can improve their skills and work better with staff. Results from this study may help administrators who can focus on improving their communication skills. When the relevant literature is examined, many studies deal with the communication skills of school administrators according to their teacher perceptions (Ada, Çelik, Küçükali, & Manafzadehtabriz, 2015; Akan & Azimi, 2019; Çınar, 2010; Kambeya, 2008; Özan, 2006; Sezgin, & Er, 2016; Sueltenfuss, 2001; Şanlı, Altun, & Karaca, 2014). However, examination of these research reveals that the majority are quantitative and few are qualitative. In his review study on the studies on the communication skills of school administrators, Gomez (2022) noted that there are few studies on this topic. He found that most of the studies were done with descriptive survey methods and using a questionnaire. The number of studies on this subject in mixed design is very few. Küçük Güngörmez and Polatcan (2020) discussed the communication competencies of school principals according to the opinions of teachers working in secondary schools. The difference in our study was the consideration of communication skills and the inclusion of teachers at all school levels. Therefore, the main purpose of this research is to reveal how school administrators' communication skills concerning the teachers' views. For this purpose, the following questions were tried to be answered.

1. How do teachers feel about the communication skills of school administrators?
2. Do school administrators' communication skills differ significantly, according to teachers, depending on the industry in which they work, their length of service at the school, the type of school, the number of teachers at the school, and the number of students?
3. How do teachers rate the communication skills of their school administrators?
4. What are teachers' views on the communication barriers they experience with their school administrators?

Method

Research Design

A mixed method design, which aims to determine teachers' views on the communication skills of school administrators, was carried out in the present study. The mixed method design is a design in which qualitative and quantitative data are collected and used together (Airasian, Gay, & Mills, 2012; Fraenkel, Wallen, & Hyun, 2012). This study used a convergent parallel approach from mixed method designs. The convergent-parallel approach is a concurrent approach and involves the simultaneous collection of qualitative and quantitative data, followed by the combination and comparisons of these multiple data sources. This approach involves collecting different but complementary data on the same phenomena. Thus, it is used for converging and for the subsequent interpretation of quantitative and qualitative data. This approach is often referred to as the concurrent triangulation design (single-phase) because the data is collected and analysed individually but at the same time. (Creswell, 2009). The most important reason for choosing the convergent parallel design in the research is to reveal the general views of teachers on the communication skills of their administrators with the collected quantitative data; at the same time, to be able to make an in-depth analysis of their managers' views on their communication skills and the communication barriers they experience with their managers, and to explain the current situation better. In

addition, it was tried to determine to what extent the answers the teachers gave in the interviews, and the general opinions they gave to the scale were consistent. This rationale can be related to Bryman's (2006) reason for "triangulation or greater validity". Triangulation or greater validity refers to the traditional view that findings can be diversified and quantitative and qualitative research can be combined for mutual validation.

In the quantitative data analysis, the survey model, one of the quantitative research designs, was used. The survey model is defined as a research approach that aims to describe past and ongoing situations, events, individuals, and objects in their terms (Karasar, 2003). In qualitative data, the basic qualitative research design was used. Basic qualitative research aims to explain how individuals build reality on their interactions in the social world. It deals with how individuals interpret their lives and the meanings they add to their experiences (Merriam, 2009).

Participants

The research population consists of 1322 teachers working in primary, secondary and high schools of the Ministry of National Education in Acıpayam and Tavas districts of Denizli province in the 2020-2021 academic year. The sample for the study's quantitative data consists of 368 teachers selected by simple random sampling. According to the formula of Cochran (1962), widely used in calculating the sample size, the required sample size for the research population was 298 (cited in Balcı, 2001). The answers of 368 participants were considered after eliminating the incorrect or incompletely filled 372 scales collected electronically. It was observed that there were participants who did not answer the questions asked to determine demographic characteristics, and these areas were considered as missing data. Table 1 shows the demographic characteristics of the teachers who participated in the quantitative part of the study.

Table 1. Frequency and percentage distribution of the demographic characteristics of the teachers from whom the quantitative data of the study were collected

Variable	Group	Number	Percentage
Tenure of Teachers at School	0-2 years	98	26,63
	between 3-6 years	129	35,05
	7 years and above	136	36,95
	Missing data	5	1,37
Branch	Primary School teacher	110	29,89
	Subject teachers	253	68,74
	Missing data	5	1,37
Type of School	Primary	146	39,67
	Secondary	128	34,78
	High Schools	87	23,64
	Missing data	7	1,91
Number of Teachers	between 0-12	125	33,96
	between 13-26	112	30,43
	27 and above	121	32,88
	Missing data	10	2,73
Number of Students	between 0-100	94	25,54
	between 101-190	84	22,82
	between 191-450	88	23,91
	between 451	88	23,91
	Missing data	14	3,82
Total		368	100

To obtain the qualitative data for the research, the study group consisting of 20 teachers was formed by using the criterion sampling method, which is one of the types of the purposeful sampling method. The criterion was based on the fact that the teachers had worked with their school administrators for at least two years.

The demographic information of the study group is shown in Table 2.

Table 2. Demographic characteristics of the teachers who participated in the interview

Variable	Group	Number
Age	20-30 years	5
	31-40 years	11
	41 years and older	4
Years of Experience	1-8 years	4
	9-16 years	12
	17 years and above	4
Tenure of Teachers at School	2-4 years	5
	5-7 years	13
	8 years and above	2
Working Time with Administrators	2 years	6
	3 years	7
	4 years and above	7
Type of School the Teachers Work	Primary	7
	Secondary	7
	High School	6
Branch	Primary School Teacher	7
	Subject Teacher	13
Total		20

Data Collection Tools

For the quantitative part of the research, the scale titled "Interpersonal Communication Skills of Primary School Administrators" developed by Şahin (2007) was used as a data collection tool. The scale included items in determining the interpersonal communication skills of school principals. Şahin (2007) formed a measurement tool consisting of 4 dimensions (empathetic listening, effectiveness, giving feedback, and inspiring confidence) and 33 items resulting from exploratory factor analysis. The total variance explanation rate of the 4 factors obtained was 68.37%. The first dimension of the interpersonal communication skills scale consists of 11 items, the second dimension consists of 9 items, the third dimension consists of 9 items, and the fourth dimension consists of 4 items. It was determined that the load values of the items' factors in the first factor were between 0.594 and 0.843, the load values of the items' factors in the second factor were between 0.660 and 0.784, the load values of the items' factors in the third factor were between 0.571 and 0.789, and the load values of the items' factors in the fourth factor were between 0.564 and 0.818. In the reliability studies conducted by Şahin, the Cronbach's Alpha coefficient was found to be r=.96. The scale was developed for primary school principals. However, studies used at all school levels (Nural, Ada, & Çolak, 2012; Saylık & Hazar, 2021; Sabancı, Şahin, Sönmez, & Yılmaz, 2016) were also found in the literature. The results obtained in the reliability studies conducted in this study were found to be .967 for the empathic listening and effectiveness dimensions, .974 for the feedback dimension, .924 for the inspiring confidence dimension, and .99 for the overall scale. The measurement tool is a five-point Likert-type scale. Teachers were asked to mark one of the items among "always (5)", "often (4)", "sometimes (3)", "rarely (2)", and "never (1)" for each item. There is no reverse-scored item in the scale.

In the qualitative part of the present study, a semi-structured interview form developed by the researchers was applied. In the interview form, there are questions to determine the communication skills of school administrators and the communication barriers that may be experienced between teachers and administrators in schools. In the preparation of the interview form, the literature was reviewed, and a question pool was created by examining the previously developed scales. After consulting an expert, a pilot research with three teachers who are professionals in educational administration was done. The readability of the questions was evaluated, and the interview form was finalized by making the required modifications. Listed below are some of the interview questions:

- What do you think about your school administrator's communication skills?
- Can you communicate comfortably with your school administrator?
- What are your views on the body language used by your school administrator?

Data Analysis

For the normality test of the study, skewness and kurtosis tests were applied to the data. It is seen that the skewness and kurtosis values were between -.994 and .494 for the general data; -.991 to .487 for the empathetic listening dimension; -.952 to .350 for the effectiveness dimension; -,923 to,330 for the dimension of giving feedback and -1,102 to,887 for the dimension of giving confidence. Since the values for skewness and kurtosis are within the range of ±2.0 (George & Mallery, 2010), the data set can be said to have a normal distribution. After determining that the data were in the normal distribution range, analyses were carried out through parametric tests.

In quantitative data analysis, tables containing personal information were created by calculating frequency and percentage. The arithmetic means and standard deviation values were used to determine the level of communication skills of school administrators. According to the views of the teachers, whether the communication skills of the school administrators differ in the 'branch' variable was examined via the Independent Samples T-test, and One-way analysis of variance was carried out to determine whether there was a difference in the variables' teachers' tenure at their schools', 'the type of school they worked in', 'the number of teachers in their schools' and 'the number of students in their schools'.

Content analysis, one of the qualitative data analysis techniques, was used in the analysis of the qualitative data. Content analysis aims to reach concepts that will help explain the data gathered. The obtained data are analysed in depth, and new codes and concepts are created. During qualitative data analysis, coding is carried out by naming the meaningful parts in the data. The data obtained during the coding process is divided into sections, analysed, compared, and correlated (Şimşek & Yıldırım, 2008).

The analysis of the qualitative data of the research started by creating the data set of the data obtained from the participants. The data sets were read several times and the concepts that might be related to the research topic were noted. The data sets were then examined in detail and coded by the researcher using the previously noted concepts. The codes were combined under the themes derived from the literature review and the interview questions prepared by the researcher. Frequency values showing themes, codes and repetition frequencies were tabulated and interpreted in detail.

For the reliability of the qualitative data, the teachers' views, which are considered important, are directly included in the interpretation of the findings. To ensure the credibility (internal validity) of the research, the notes taken at the end of each interview were summarized by the researcher and confirmed by the participants. For external validity, the data were presented in tables; themes and codes were determined and evaluated. While analysing the data, attention was paid not to reveal the identity of the participants and the school they work in. Participants in the data tables are abbreviated as T1-T20 (Teacher1-Teacher20).

Findings

Findings on Quantitative Data

Firstly, teachers' views about the communication skills of school administrators are included. The arithmetic means and standard deviation values of school administrators' communication skills are given in Table 3. According to the findings in Table 3, teachers expressed their opinions as "often" for the dimensions of empathic listening ($\bar{X}$=3.80), effectiveness ($\bar{X}$=3.79), giving feedback ($\bar{X}$=3.76) and inspiring confidence ($\bar{X}$=3.89). This ratio was also found in the overall average ($\bar{X}$=3.80). Teachers expressed their opinions on the interpersonal communication skills of school administrators at the level of "often".

Table 3. Arithmetic mean and standard deviation values for school administrators' communication skills

Dimensions	N	Mean	Sd	Frequency
Empathic listening	368	3,80	,99	Often
Effectiveness	368	3,79	1,00	Often
Giving feedback	368	3,76	1,02	Often
Inspiring Confidence	368	3,89	,97	Often
Overall average	368	3,80	,98	Often

To determine whether there is a significant difference concerning the communication skill levels of school administrators according to the branch variable, independent groups t-test was performed, and the test results are

given in Table 4. As is seen in the table, the communication skill levels of school administrators show a significant difference regarding the branch variable. There is a significant difference between class teachers and subject teachers in the general average and in all sub-dimensions in favour of class teachers ($p<.05$).

Table 4. T-test results showing the distribution of teachers' views on the communication skills of school administrators regarding the branch variable

Dimensions	Branch	N	Mean	t	df.	Sig.
Empathic listening	Class	110	4,14	4,716	257,15	,000
	Subject	253	3,67			
Effectiveness	Class	110	4,13	4,551	248,14	,000
	Subject	253	3,67			
Giving feedback	Class	110	4,13	5,116	257,12	,000
	Subject	253	3,61			
Inspiring Confidence	Class	110	4,24	5,053	273,60	,000
	Subject	253	3,76			
Overall average	Class	110	4,14	4,932	257,83	,000
	Subject	253	3,66			

One-way analysis of variance was performed to determine whether the communication skills levels of school administrators differ according to the teachers' tenure at the school, and the analysis results are given in Table 5. As a result of the analysis of variance, a statistically significant difference was calculated on the overall mean and in all sub-dimensions. According to the Scheffe test, which was used to test the source of the differences, the difference was found to be between the teachers who worked at their school for 7 years or more and the teachers who worked between 3-6 . The results show that teachers who have worked at the school they lead for 7 years or more are more positive about their administrators' communication skills than teachers who have worked at the school for 3 to 6 years.

Table 5. One-way analysis of variance results showing the distribution of teachers' views on school administrators' communication skills according to the variable of tenure of the teachers at the school

Dimensions	Tenure of the Teachers	*N*	Mean	*Sd*	*F*	*Sig.*	Significant difference
Empathic listening	0-2 years (1)	98	3,84	0,94	6,126	,002	(3)-(2)
	3-6 years (2)	129	3,59	1,06			
	7 years and above (3)	136	4,00	0,88			
Effectiveness	0-2 years (1)	98	3,78	0,93	7,284	,001	(3)-(2)
	3-6 years (2)	129	3,58	1,07			
	7 years and above (3)	136	4,04	0,92			
Giving feedback	0-2 years (1)	98	3,74	0,91	5,705	,004	(3)-(2)
	3-6 years (2)	129	3,57	1,10			
	7 years and above (3)	136	3,98	0,95			
Inspiring Confidence	0-2 years (1)	98	3,92	0,94	6,307	,002	(3)-(2)
	3-6 years (2)	129	3,68	1,06			
	7 years and above (3)	136	4,10	0,84			
Overall average	0-2 years (1)	98	3,81	0,91	6,550	,002	(3)-(2)
	3-6 years (2)	129	3,59	1,05			
	7 years and above (3)	136	4,02	0,88			

A one-way analysis of variance was conducted to determine whether the communication skills levels of school administrators differed according to the type of school where teachers worked, and the results of the analysis are shown in Table 6. As can be seen, statistically significant differences were found in terms of the overall average and the type of school in all dimensions. To test the source of the differences, the Scheffe test, one of the Post Hoc tests, was used. Among the teachers working in primary and secondary schools and teachers working in primary and high schools, significant differences were found in favour of teachers working in primary schools on the overall mean and in all dimensions.

Table 6. One-way analysis of variance results showing the distribution of teachers' views on the communication skills of school administrators according to the type of school the teachers work in

Dimensions	School Type	*N*	Mean	*Sd*	*F*	*Sig.*	Significant difference
Empathic listening	Primary (1)	146	4,06	0,85	9,520	,000	(1)-(2), (1)-(3)
	Secondary (2)	128	3,69	0,98			
	High Schools (3)	87	3,53	1,07			
Effectiveness	Primary (1)	146	4,04	0,90	8,038	,000	(1)-(2), (1)-(3)
	Secondary (2)	128	3,69	1,03			
	High Schools (3)	87	3,54	1,07			
Giving feedback	Primary (1)	146	4,05	0,88	11,067	,000	(1)-(2), (1)-(3)
	Secondary (2)	128	3,62	1,02			
	High Schools (3)	87	3,47	1,10			
Inspiring Confidence	Primary (1)	146	4,15	0,83	10,302	,000	(1)-(2), (1)-(3)
	Secondary (2)	128	3,80	1,00			
	High Schools (3)	87	3,59	1,03			
Overall average	Primary (1)	146	4,06	0,86	9,982	,000	(1)-(2), (1)-(3)
	Secondary (2)	128	3,69	0,98			
	High Schools (3)	87	3,53	1,06			

According to the teachers' views, one-way analysis of variance was used to determine whether the communication skills levels of school administrators differ according to the number of teachers in their schools, and the results are given in Table 7. As a result of the Scheffe test, a statistically significant difference was reached in the overall mean and in all sub-dimensions. The differences were on the overall average and in all dimensions, and a significant difference was calculated between the teachers that work with 0-12 teachers in their schools and those that work with 27 or more teachers. The differences are in favour of teachers who work with between 0-12 teachers in their schools.

Table 7. One-way analysis of variance results showing the distribution of teachers' views on the communication skills of school administrators according to the variable of the number of teachers in the school they work

Dimensions	The number of teachers	*N*	Mean	*Sd*	*F*	*Sig.*	Significant difference
Empathic listening	between 0-12 (1)	125	3,97	1,08	3,397	,035	(1)-(3)
	between 13-26 (2)	112	3,76	0,91			
	27 and above (3)	121	3,65	0,94			
Effectiveness	between 0-12 (1)	125	4,00	1,10	4,176	,016	(1)-(3)
	between 13-26 (2)	112	3,71	0,93			
	27 and above (3)	121	3,65	0,94			
Giving feedback	between 0-12 (1)	125	3,96	1,07	4,169	,016	(1)-(3)
	between 13-26 (2)	112	3,68	0,97			
	27 and above (3)	121	3,61	0,97			
Inspiring Confidence	between 0-12 (1)	125	4,04	1,06	3,285	,039	(1)-(3)
	between 13-26 (2)	112	3,88	0,92			
	27 and above (3)	121	3,73	0,88			
Overall average	between 0-12 (1)	125	3,98	1,07	3,897	,021	(1)-(3)
	between 13-26 (2)	112	3,74	0,91			
	27 and above (3)	121	3,65	0,92			

One-way analysis of variance was performed to determine whether the communication skills of school administrators differ according to the number of students in their schools concerning the teachers' views, and the analysis results are shown in Table 8. Accordingly, there was no statistically significant difference between the overall mean and all sub-dimensions.

Table 8. One-way analysis of variance results showing the distribution of teachers' views on the communication skills of school administrators according to the variable of the number of students in the school they work

Dimensions	The number of students	*N*	Mean	*Sd*	*F*	*Sig.*	Significant difference
Empathic listening	between 0-100 (1)	94	3,88	1,06	1,051	,370	-
	between 101-190 (2)	84	3,91	1,03			
	between 191-450 (3)	88	3,67	0,91			
	450 and above (4)	88	3,78	0,90			
Effectiveness	between 0-100 (1)	94	3,92	1,08	1,018	,385	-
	between 101-190 (2)	84	3,83	1,08			
	between 191-450 (3)	88	3,67	0,91			
	450 and above (4)	88	3,77	0,92			
Giving feedback	between 0-100 (1)	94	3,86	1,08	0,872	,456	-
	between 101-190 (2)	84	3,83	1,08			
	between 191-450 (3)	88	3,63	0,94			
	450 and above (4)	88	3,74	0,93			
Inspiring Confidence	between 0-100 (1)	94	3,97	1,07	1,188	,314	-
	between 101-190 (2)	84	3,99	0,99			
	between 191-450 (3)	88	3,74	0,85			
	450 and above (4)	88	3,90	0,89			
Overall average	between 0-100 (1)	94	3,90	1,06	1,003	,392	-
	between 101-190 (2)	84	3,87	1,04			
	between 191-450 (3)	88	3,67	0,89			
	450 and above (4)	88	3,78	0,89			

Findings Related to Qualitative Data

To answer the research question, "What are the positive perceptions of the teachers regarding the communication abilities of the administrators? ", semi-structured interview questions were posed to the teachers, and a content analysis was performed on the collected data to generate themes and codes. The outcomes are presented in table 9.

Table 9. Theme and code list obtained from teachers' positive views on communication skills of school administrators

Themes	Codes	Frequency of Code Repetition
Effective Communication Skills	Empathy	6
	Respect	3
	Confidence	4
	Sincerity	6
	Honesty	3
	Consistency	4
Feedback	Relevant	8
	Explanatory	3
	Timely	5
Getting to Know the Staff	Solidarity	12
	Caring	6
Listening Skill	Value	10
	Participation in Decisions	7

When Table 9 is examined, considering the teachers' views on the communication skills of their administrators, the theme "effective communication skills of administrators" consisted of the codes "empathy, respect, sincerity, honesty, consistency and confidence"; the theme "school administrator's feedback" consisted of "relevant, explanatory and timely" codes; the theme "the school administrator's getting to know her staff" consisted of "solidarity and caring" codes; and the theme "the school administrator's listening skill" consisted of "valuing and participation in decisions" codes.

In the "empathy" code, T2 includes statements such as *"I think my school administrator has effective communication skills...he tries to understand me and my other friends..."*, T4 includes statements such as *"...I work with a school administrator with developed empathy..."* and T10 includes statements such as *"...for example,*

our children are very close in age. If my child is sick or there is a situation related to him, he immediately acts with understanding, which I think is empathetic. This makes me happy too. We have good relationships because my school administrator has good communication skills…".

Teachers who think that their administrators are "sincere" state that they have good relations with their administrators. Expressing opinions in the code of "sincerity", T20's *"... says "good morning" sincerely to everyone he meets every morning, asks how they are, and has a stance that shows that it asks them really sincerely, not as a duty*." This statement confirms the situation.

When the 'administrator's 'feedback' theme was examined, the teachers stated that their administrators gave relevant, explanatory, and timely feedback while expressing their opinions. T14, who expressed his opinion in the "relevant" code, explained his view on this code as "*does not remain indifferent when I want to get information or something about an event at school or outside of school, he is interested. If he does not have an urgent job, he gives information immediately, or if there is something he does not know about the legislation, he investigates and returns…*".

Teachers who expressed their opinions on the theme 'of the school administrators 'getting to know his staff' stated that their school administrators wanted to work together and cared about their teachers. In this regard, T2 said *"… states that we are a family by emphasizing in every meeting and that there will be strength in unity…*", T10 explained the opinion as *"… every birthday that has recorded the birthdays of teachers gives us gifts, albeit small ones…*", T12 said "*…we can make this project successful together…"* and T18 stated their views as "*… they remember when there is an important day for us, they take care to attend places such as weddings and engagements that we invite, and they go and buy their presents for teachers who have children…".*

The codes of "valuing" and "participating in decisions" emerged under the school administrator's 'listening skill' theme. T4 expressed his opinion on this issue as follows;

> *When there is an activity to be held at the school, my school principal gathers the teachers who will participate in that activity in his room. Gets feedback on the event. He explains the plan in his head. A common ground is found, and an activity plan is created… of course, he values opinions…* (Interview Record: Teacher 4).

In addition, T20 stated the following;

> *… I have worked with many principals. Let me tell you about an application I encountered for the first time and was surprised. The course plan was to be made at school last week. In general, the school administration makes the planning and communicates it. But our school principal gathered the teachers who will attend the course and offered to do the planning together…* (Interview Record: Teacher 20).

Finally, the question "What are teachers' views about the communication barriers they experience with their administrators" was answered in the present study. The themes and codes created by content analysis of the data obtained from the views of the teachers are given in Table 10. When Table 10 is examined, it is seen that the teachers who think the effective communication skills of the administrators are inadequate believe that the administrators have a careless attitude while listening to them and do not take them into account by using their position.

Table 10. Theme and code list obtained from teachers' opinions on communication barriers between teachers and school administrators

Themes	Codes	Frequency of Code Repetition
Effective Communication Skills	Passive Listening	5
	Differences in Status	2
Types of communication	Indifference	5
	Rude Behaviour	2
Body Language	Cold	1
	Inconsistent	2
Feedback	Careless	1
	Late	3
Getting to Know the Staff	Reckless	2
Listening Skill	Disregard	3

Commenting on the 'Passive Listening' code, T5 said;

> *I don't think my school administrator has effective communication skills. Because when I go to his room, he greets me with an indifferent attitude at first. I can immediately understand this. Most of the time he's looking at his computer or phone while I'm talking. There are times when I have to repeat what I have said. This behaviour of my school administrator shows that he lacks communication skills. In my opinion, a school administrator should first show that he/she takesthey take into account and listen to whoever the other person is* (Interview Record: Teacher 5).

T13, who expressed his opinion on the 'Status Difference' code, used the following expressions in the meeting;

> *... In my opinion, school administrators should not look down on people by using the power of their office, I think that he is also a teacher and should be aware of this situation when communicating with other teachers.In the end, we all do the same job, but the fact that our school administrator thinks he is different and acts as if he is an unreachable person makes all our bilateral relations and communication difficult* (Interview Record: Teacher 13).

As it is seen in Table 10, the codes of "indifference" and "rude behavior" emerged under the theme "Types of communication with administrators" from the teachers' views regarding the communication barriers they experience with their administrators. According to this information, it is understood that there are some negativities in the communication behaviors of the school administrators, and this negative situation occurs in the form of indifference and rude behavior of the school administrators. Among the participants who expressed an opinion in the code of "indifference", T1 said, *"...very indifferent to me when communicating with my school administrator..."*, T8 said, *"...I am tired of encountering the indifferent attitude of my school administrator..."*, T13 said, *"...I know that all the teachers in my school complain about the careless attitude of our school administrator."*, T17 said, *"...I think that one of the conditions for being elected as a school administrator is that people should be valued in bilateral relations and their opinions should be given importance"*. These statements clearly indicate the situation mentioned.

It was observed that the codes of "cold" and "inconsistent with his words" are included in the "Manager's Body Language" and emerged from the theme concerning the teachers' views on the communication barriers they experienced with their administrators. Teachers, who see the body language of their administrators as inconsistent with their behaviors, describe their administrators as being cold. Commenting on this issue, T13 said, "*Neither our school administrator's body language and behaviors nor what he says are consistent. You can easily tell from his demeanor that he doesn't even believe what he's telling you.*" T5, who expressed his opinion on the same issue, said, "*There is definitely an inconsistency between my school administrator's body language and his behavior. For some reason, when I was listening to him, what he said to me does not reassure me.*" T17, who expressed his opinion about his school administrator's body language under the code "cold", said, "*I cannot predict whether there is an inconsistency between my school administrator's body language and his behavior, because he always tells what he wants to say with a dull expression. For example, when there is a program that teachers need to prepare on a subject, instead of motivating and guiding them, he coldly asks for it to be done.*"

It has been observed that the codes of "careless" and "late" appeared under the theme "Manager's Feedback". According to this information, it is understood that the administrators either take a careless attitude during the evaluation of the requests and complaints stated by the teachers, or they do this late even if they give feedback. Commenting on the code "Careless", T9 makes this clear as;

> *When we have a request from our school administrator, he always has to make an excuse, whether it is about the school or about our class. Usually, this excuse is related to the lack of funding from the school and financial difficulties. Although our school administrator's communication skills are good, he tries to delay or make us forget instead of finding a solution when we have requests or complaints. We now know that our requests will not be fulfilled and that our school administrator will not care about them* (Interview Record: Teacher 9).

T11, who expressed her opinion of the "delayed" code, used the following expressions during the interview;

> *It may take some time for our school administrator to deal with requests and comments made by us. I guess this situation is a consultation to a senior management. Since he is reluctant to make decisions on his own, he gives us feedback after receiving the opinion of his senior management about requests or complaints* (Interview Record: Teacher 11).

It has been observed that the "reckless" code emerged under the theme "Getting to Know the staff". T6 and T8, who commented on the "Reckless" code, commented as follows;

> *... I think he only knows what I do in my lessons, my attitude towards the student, how I communicate with the parents... I don't think he cares much about my lifestyle or something like that...* (Interview Record: Teacher 6).

> *I think school administrators should be good communication experts and get to know their staff closely. But I can say that my school principal is not very willing to get to know us better. The better a school principal who does not know his staff and does not share the sadness and joy of his staff can be, the better our school principal can be in this regard...* (Interview Record: Teacher 8)
>
> .
>
> Finally, it was observed that the code " Disregard" appeared under the theme "Listening Skill of the Manager". The problem is that administrators do not care about their opinions when they listen to teachers. T9, who has expressed an opinion on this issue said that *"...I don't think my school administrator is listening to me. If I make a request, it doesn't mean much to him. She was doing something on her computer recently when I went to her room to talk to her about the suspension of my class. In any case, nothing has been done about my request so far..."*.

Discussion, Conclusion, and Suggestions

According to the findings from the quantitative data of the present study, the communication skills of school administrators were perceived as sufficient according to teachers. The communication skills of school administrators are perceived at the highest level in the "confidence" dimension, followed by "empathetic listening" and "effectiveness" dimensions, respectively. Confidence in the individual, and his goals, knowledge, and capacity affect communication (Ärlestig, 2008). In the results obtained from the qualitative data of the research, it is seen that the teachers think that their administrators have sufficient, positive, and good communication skills. According to these results, it can be said that school administrators have effective communication skills, and the communication process between administrators and teachers in schools is effective. This shows that teachers and school administrators can work in harmony. Pauley (2010) states that school administrators have multi-faceted tasks such as setting goals, organizing tasks, motivating employees, reviewing results, making decisions, planning, organizing, division of labor, directing, coordinating and evaluation tasks. It is stated that there should be communication, otherwise, the tasks cannot be accomplished successfully, the objectives cannot be achieved, and the decisions cannot be implemented (cited from Pauley, Başaran & Çınkır, 2013). According to Kambeya's (2008) research, principals who successfully demonstrate their interpersonal communication skills have experienced a school where teachers work in a climate conducive to teaching and learning. Principals who do not demonstrate good interpersonal communication skills work with teachers who choose not to push themselves beyond expectations. In parallel with the results of our research, Açıkel (2010), Akan and Azimi (2019), Asar (2014), Ayık and Uzun (2016), Çınar (2010), Çiftli (2013), Değer (1998), Ekici (2020), Kurt (2015), Küçük Güngörmez (2020), Öner (2019), Özkadam (2018) and Yılmaz (2015) concluded that the communication skills of school principals are sufficient and at a positive level. The results of Sueltenfuss's (2001) findings showed that the majority of teachers perceived their principals to use listening communication skills "often", and self-presentation and clarifying skills "very often". As a result of the data analysis on the communication styles adopted by secondary school principals, Samuel and Okotoni (2018) revealed that most of the principals adopted inclusive, open, and assertive communication styles. It has been observed that school principals who adopt inclusive, open and assertive communication styles respect teachers' opinions. Principals allowed teachers to take an active role in decision-making processes in schools. However, in his study, Uyğur (2014) concluded in the opposite direction to this result of research, and in his research, he found out that the communication skills of administrators are at low level according to the views of teachers. Memduhoğlu (2015) also found that the interpersonal communication skills of primary school administrators were at a moderate level, according to the opinions of administrators and teachers.

The teachers' views' being at the adequate level on the communication skills of administrators may be proof of the positive and sincere teacher-administrative relations in schools. This shows that there is a healthy communication environment at schools. Decision-making, cooperation, motivation and job satisfaction will likely be higher in schools where a positive communication environment is provided. As a result, effectiveness and productivity will increase (Tutar, 2009). The increase in cooperation and motivation at schools will also reflect

on the schools' stakeholders, such as family and students, which will lead students to be more successful in every field (Şahin, 2007).

According to another result of the research, the class teachers' views on the administrators' communication skills were higher than the subject teachers. Primary school teachers spend more time in schools than subject teachers. During this time, they are in school, they spend most of their time in their classrooms with their students, and they only deal with the students' problems in their classes for a year. For this reason, class teachers often communicate with the parents of the students when they decide on their class or the students in the class. They are relatively free in their decisions regarding their classes. Since class teachers have only one class for which they are responsible, they do most of the things that need to be done about their classes themselves, without leaving it to the school administrator. This way of working of class teachers also facilitates the work of school administrators and gives them time to meet the demands and requests of school administrators mostly from the top management. Bursalıoğlu (2015) states that the division of labor and cooperation without a written rule affects communication positively at schools, and that school administrators who cooperate with employees, help solve their problems, and are tolerant and motivating can establish healthier communication with the employees. A similar result to the result of this study was not found in the literature review. The research of Çınar (2010), in which subject teachers found the communication skills of school administrators more positive than class teachers, and Açıkel (2010), in which science and mathematics subject teachers found the communication skills of school administrators more positive than other subject teachers, differ with the result of the present study. Coşkuner (2008), Çiftli (2013), Uyğur (2014), and Küçük Güngörmez (2020), on the other hand, concluded that there is no difference in the views of the teachers of different branches about communication skills of school administrators.

When the tenure of the teachers at schools is considered, the views of the teachers who work longer in their schools regarding the communication skills of their administrators are more positive than the teachers who work less. However, on the contrary, in the study, it was seen that there was no significant difference between the views of teachers who started working at school in 1 or 2 years and those of teachers who worked longer in their schools. It is believed that the positive views of teachers who have recently started working in their schools regarding their communication with their administrators are due to the fact that they do not know the school and its administrators well, and even if they do, they have not yet formed a negative opinion.. After a while, it is assumed that as they get to know their school and their principal, they realize their lack of communication and develop an attitude towards i. Still, their disregarding attitudes are thought to come to the fore as they work for many years, and these differences are seen. No research results were found to support this study conclusion or express a contrary view. Regarding the tenure of teachers at schools, Asar (2014), Özpolat (2019), and Yılmaz (2015) concluded that the tenure of teachers at schools does not make a significant difference in their views on the communication skills of their administrators.

According to another result obtained from the present research, teachers' views on the communication skills of school administrators differ according to the type of school they work in. As seen in the branch variable, primary school teachers' views on the communication skills of school administrators are more positive than the views of teachers working in both secondary and high schools. Yılmaz (2015), in his research, concluded that the teachers working in kindergartens had more positive views on the communication skills of their administrators regar ding the branch variable. Contrary to the present study, Asar (2014) concluded that teachers work in different types of schools does not make a significant difference in teachers' views on school administrators' communication skills.

The communication skills of the administrators who have more teachers in their schools are perceived more negatively by the teachers. This result is not surprising, given that communicating in crowded environments is more complex and difficult. Akcan (2014) stated in his research on the conflict that the size of the organization can be measured with data such as economic capacity and the number of personnel and that the size of the organization is directly related to the complexity to be experienced in the organization. He also gave an example as the difficulties in managing an institution with five personnel and an institution with fifty personnel are not the same; the problems in an organization with fifty personnel will be more than an organization with five personnel, and it will be easier to deal with problems in a small organization. Başaran (2004) also stated that the growth of organizations increases the communication environment and causes communication to be experienced in a complicated way.

According to the findings of the study, the increased number of students in the schools did not influence the instructors' opinions regarding the communication skills of school administrators. This study suggests that the role or impact of student population on the communication between school officials and instructors is minimal.Therefore, whether there are few or many students in their schools does not change the communication

skills of school administrators with their teachers. A relevant research result shows that the number of students in schools affects the communication skills of school administrators could not be reached.

From the qualitative data of the research, it was tried to reach the teachers' views about the administrators' communication skills and the communication barriers that the teachers experienced with their administrators. According to teachers' views, the communication skills of school administrators were generally found to be positive. Teachers emphasized empathy and sincerity regarding the effective communication skills of their administrators. Regarding the feedback of their administrators, the teachers stated that while expressing the opinions of their administrators, they gave explanatory and timely feedback on the subject. The teachers who expressed their opinions about the school administrators "knowing their staff" stated that the school administrators want to work with them and that they care about their teachers. Regarding the "listening skill" of the school administrator, teachers emphasized that their administrators value them and include them in decisions. These findings are consistent with the quantitative data of the study. In the quantitative data, teachers stated that school administrators showed high levels of empathic listening, effectiveness, feedback, and confidence-building skills. Unlike these results, Sezgin and Er (2016), in their qualitative study with teachers revealed that the school principal does not use the communication process sufficiently to improve teacher cooperation and school activities. Teachers tend to have a negative attitude toward school principals' communication styles. Most of the teachers interviewed described the communication style of the school principal as offensive and offensive.

It is seen that there are no communication barriers between teachers and administrators to a great extent. In addition, communication barriers occur when administrators actively listen to teachers, when administrators act indifferent, cold, and rude towards teachers, when the words of the administrators do not match with their body language, and when the administrators act in haste while giving feedback. The fact that these barriers, which are stated to exist, are not experienced by the majority of the teachers but only by a few of them shows that there are no major communication barrier problems in schools. This result shows that the communication environments in schools are mostly healthy. The results of Ärlestig's (2007) interviews with teachers and principals showed that communication is mainly about daily activities, knowledge, and productivity. Teachers felt they were well-informed and satisfied with their daily communication with their principals. However, they stated that they lacked conversations about their work in the classroom and in-depth conversations about student results and school improvement.

According to the results of the qualitative and quantitative data of the study, it can be said that, in general, schools have a healthy school climate, the relations between teachers and administrators are sincere, trusting and supportive, and teachers are also included in the decision-making process at schools. It has been determined that the communication abilities of school administrators are adequate, and it is believed that communication obstacles created by administrators are not insurmountable problems for teachers and administrators. This research has some limitations. First, the communication skills of school administrators were evaluated based only on the opinions of teachers. Other school stakeholders (other staff, students, parents, etc.) can be included in the research study group. Another limitations is that data were collected during the pandemic period. Changes in communication tools and types during the pandemic may have affected the answers given by teachers. Since the results of the research revealed that the positive communication skills between the administrators and teachers working in primary schools are higher, it can be suggested that necessary studies should be carried out to ensure that this situation occurs in secondary and high schools. Senior management can conduct the necessary procedures to identify communication hurdles between school administrators and teachers, and research can be conducted to find solutions. School administrators, for instance, can receive training on active listening abilities. Expanding the population and study group of the current study allows for additional research to be conducted. The relationships between teachers' perceptions of administrators' communication abilities and characteristics such as performance, satisfaction, school environment, and school culture can be examined.

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Author (s) Contribution Rate

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Conflicts of Interest

The authors have no conflicts of interest to declare.

Ethical Approval

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The Opinions of the Principals and Teachers on the Classroom Inspection Conducted by the School Principals

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The Opinions of the Principals and Teachers on the Classroom Inspection Conducted by the School Principals

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Abstract

This study aims to determine the opinions of principals and teachers about the inspection of classrooms conducted by school principals. The phenomenological method, which belongs to the qualitative methods, was used for the research. The study's research group consisted of 10 school principals, selected according to the criterion sampling, working in independent secondary schools in the center of Bolu during the second semester of the 2021-2022 school year, and 20 teachers working in these schools. The research data were collected using semi-structured interview forms developed by the researcher, and the data were analyzed using descriptive analysis and content analysis. The research found that principals and teachers were positive and negative about principals' knowledge and skills in inspecting classrooms. Principals' problems in classroom observation, the appropriateness of principals' classroom observation, and the effects of principals' classroom observation on teachers' development were also revealed. In addition, it was found that both principals and teachers frequently mentioned: "the topic of in-service training" for principals to make principal inspections more effective. It was also found that the influence and authority of principals should be strengthened, and teachers expressed strong opinions about increasing inspection time. In connection with these findings, it was suggested that principals receive in-service inspection training, extend inspection duration, conduct inspection according to objective criteria, and expand principals' authority for instructional inspection.

Keywords: Classroom inspection, Principal, Teacher

Introduction

Today, as in any field, there are developments in education, studies are conducted to improve the quality of education. These studies may vary according to countries' social, economic and cultural characteristics. The studies discuss many topics such as educational programs, teaching materials, teacher and administrative competencies and inspections. In Turkey, these and similar topics are discussed, and studies are conducted to improve the quality of education. Inspection, one of these working titles, is on the education agenda, and how, when, and by whom inspection should be conducted are being discussed. Considering the significance of effective and efficient inspection, it is thought that inspection supports the attainment of objectives by favorably influencing the performance of educational institutions. (Altunay, 2020; Aydın, 2014).

Because systems need effective management within themselves, it can be said that effective management can only be ensured through effective inspection. (Öztürk & Gök, 2010). It is a fact that control (Aydın, 2014), which is both an organizational and a principle necessity, has a positive effect on the efficiency and effectiveness of the organization for the benefit of the public (Ateşoğlu & Akbaşlı, 2020). When examining the literature, Taymaz (2002) defines the concept of inspection, for which there are different definitions, as the situation of monitoring and evaluating the work done, making suggestions to the authorities to increase efficiency, and assisting the personnel of the institution by guiding their work and training processes; Aydın (2014) defines it as the process of determining the compliance of organizational actions with the intended principles and rules. Assuming that inspection is important for the development of organizations, it becomes clear that educational inspection is also important in educational institutions that are also organizations. Altıntaş (1992) explains educational inspection as the process of uncovering the realization situation, identifying and evaluating existing problems in the context of legislation, the purpose of the institution, educational principles, and economic measures related to human and material resources of educational institutions. According to Lunenburg and Ornstein (2013), instructional inspection is the process of monitoring and correcting the functioning of schools to prevent deviation from goals. Instructional inspection, which is a part of the educational inspection, is explained as the evaluation process of

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teaching (Balcı, 2005) or inspection by teachers during teaching (Yeşil & Kış, 2015). Similarly, Taymaz defines instructional inspection as the process of observing and evaluating teachers who teach in educational institutions in terms of their education and training (Taymaz, 2002). From this point of view, it can be said that the main purpose of classroom inspection is to improve the quality of education by evaluating teachers. However, to achieve the purpose of inspection, it is important to know by whom the inspection is conducted.

In the Ministry of National Education ([MoNE], MEB), inspectors mostly conducted classroom inspections, which continued until 2014 (Taymaz, 2015). However, with the regulations issued after that date, the situation has changed, and principals' influence in inspecting classrooms has increased. With the change in the law in 2014 and 2016, the tasks of classroom inspection were taken from the school inspectors (Ergen & Eşiyok, 2017) and transferred to the school principals under the previous legislation (MoNE, 2000). After this regulation, institutional inspection was assigned to education inspectors, and classroom inspection was assigned to school principals (Ateşoğlu & Akbaşlı, 2020). Considering that inspection is a situation that requires continuity, the importance of classroom inspection conducted by school principals is even more obvious. (Duykuluoğlu, 2018). This is because the person who is responsible for achieving the set goals in education and training in schools is the school principal. With the effective management and control of school principals, it is possible to realize the educational activities and achieve the intended results of these activities (Yeşil, 2018). For this reason, it can be said that school principals with the necessary knowledge and experience in the field of inspection will positively contribute to achieving the purpose of inspection (Duykuluoğlu, 2018) and will have a positive impact on teachers' professional development. However, school principals' inspection of classrooms can produce positive and negative results.

Since principals are in the same school, the ability to inspect teachers more easily and frequently and to determine the results in a short time are the positive aspects of principal inspection. The negative effects of principals on instructional inspection include principals' lack of knowledge and skills in inspection and the fact that teachers and principals are colleagues (Koç, 2018). Considering that the person who achieves the goals by keeping the culture of schools alive is the principal, the importance of principals becomes clear (Bursalıoğlu, 2015), and their responsibility for classroom inspection increases. This is because classroom inspection is considered to eliminate teachers' deficiencies, improve their skills by adapting them to the profession and environment, and evaluate teachers' success in the classroom. However, for principals to contribute to teachers' development, teachers' deficiencies must be revealed and the type of support they need must be identified. For this reason, classroom inspections of teachers should be conducted more frequently (Memişoğlu, 2001; Taymaz, 2015). Principals strive to improve themselves so that they can carry out the inspection according to its purpose and that the inspection process is a professional contribution for the teacher. (Özmen & Batmaz, 2006). For this purpose, principals must have qualities such as supervisory skills, contribution to teacher development, and timely inspection behavior (Aydeniz Can & Gündüz, 2021). In this process, school administrators are expected to ensure the development of the school by managing the school following the established goals. To achieve this, the administrator must know the curricula of the classrooms in their school, improve communication with teachers, ensure collaboration between teachers, and control the process by evaluating teachers (Ural & Aslim, 2013). However, it has been shown that school principals do not receive the necessary training in areas such as guidance, instructional techniques, measurement, and evaluation for inspecting classrooms (Tonbul & Baysülen, 2017; Akbaşlı, 2010). Reasons such as the fact that educational administration is not considered a specialization in Turkey and that school principals have many duties and responsibilities cause principals to have difficulty in fulfilling their supervisory and leadership responsibilities (Bayraktutan, 2011; Fırıncıoğulları Bige, 2014). Also, the fact that principals do not find enough time to inspect courses (Altunay, 2020) has a negative impact on achieving the purpose of inspection. On the other hand, principals are expected to improve teachers' effectiveness to achieve the set goals in education (Ateşoğlu & Akbaşlı, 2020). For this reason, it is important to determine the opinions of school principals and teachers about the inspection of classrooms conducted by school principals. Thus, the aim is to identify the shortcomings of classroom inspections conducted by school principals from the point of view of school principals and teachers and to propose solutions. In addition, the study results are intended to contribute to more effective classroom inspection both in the literature and in the context of the findings.

Purpose of the research

The purpose of this research is to determine the opinions of principals and teachers on classroom inspection of school principals. To this end, answers to the following questions are sought. As a principal:
1-Do you think you, as a school principal, have sufficient knowledge and skills regarding classroom inspection? Why?
2-Do you think classroom inspection is a problem? If your answer is yes, can you give the reasons why?
3-Do you think it is appropriate for classroom inspections to be conducted by school administrators? Why?

4-Do you think classroom inspections conducted by principals serve to develop teachers? Why?
5- What do you think about making principal-led classroom inspections more effective?
As a teacher:
1-Do you think your principal has sufficient knowledge and skills regarding classroom inspections? Why?
2-Do you think your principal has a problem with inspecting classrooms? If you answered yes, can you give the reasons why?
3-Do you think the school principal should conduct classroom inspections? Why?
4- Do you believe that classroom inspections conducted by school leaders contribute to teacher development? And why?
5- What do you think about how the classroom inspections conducted by the principal can be made more effective?

Method

Research Model

The phenomenological method, which belongs to the qualitative research methods, was used for the research. The phenomenological method (Creswell, 2007), which involves bringing individual experiences about a phenomenon to a more general level, can be defined as revealing and interpreting individual perceptions about a phenomenon (Yıldırım & Şimşek, 2011). In this study, the views of principals and teachers about classroom inspection were examined in detail, and an attempt was made to uncover them.

Study group

The study's research group consisted of 10 school principals, selected according to the criterion sampling, working in independent secondary schools in the center of Bolu during the second semester of the 2021-2022 school year, and 20 teachers working in these schools.

Table 1. The demographic characteristics of the participants in the study

		Principal	Teacher
Gender	Female	-	T1, T2, T3, T4, T6, T7, T10, T11, T12, T13, T14, T15, T16, T19, T20
	Male	P1, P2, P3, P4, P5, P6, P7, P8, P9, P10	T5, T8, T9, T17, T18
Education status	Graduate	P1, P3, P6, P8, P9, P10	T1, T2, T3, T4, T5, T7, T9, T10, T11, T12, T13, T15, T16, T17, T18, T19, T20
	Postgraduate	P2, P4, P5, P7	T6, T8, T14,
Seniority	0-4 years	P3, P4, P10	-
	5-8 years	P2, P6, P8, P9	T11, T12, T13
	9-12 years	P7	T1, T3
	13-16 years	P1, P5	T6, T7, T8, T9, T10, T14, T15, T17, T18, T19, T20
	17-20 years		T4, T16
	21 + years	-	T2, T5

Table 1 shows that all principals are male; 6 have a university degree, and 4 have a postgraduate degree. Three of them have seniority of 0-4, 4 of 5-8, 1 of 9-12, and 2 of 13-16. Fifteen of the teachers are women, 5 of them are men, 17 of them have a university degree, and 3 of them have a postgraduate degree; it was found that 3 of them had 5-8, 2 of them 9-12, 11 of them 13-16, 2 of them 17-20, and 2 of them 21 or more years of service. The study sample was created using the criterion sampling method, which belongs to non-probability sampling. The main purpose of criterion sampling is that the researcher determines in advance the criteria for who will be included in the study and forms the sample from individuals who best meet these criteria (Yıldırım & Şimşek, 2011). In the present study, care was taken to ensure that all teachers participating in the study were controlled by their principals, the principals were listed as permanent employees, and all participants were volunteers.

Data collection instrument

The researcher prepared semi-structured interview forms to elicit principals' and teachers' opinions about the instructional inspections conducted by principals, and the research data were collected using these forms. To ensure the validity and reliability of the interview forms, the relevant literature was searched, and a draft of the

questions was prepared. The opinions of three researchers who are experts in the field were obtained for the draft questions, and internal validity was ensured. In addition, to check the clarity of the questions, the questions were presented to two Turkish teachers. In addition, an interview questionnaire consisting of 5 questions was applied to three principals who were not part of the sample and five teachers who were excluded from the sample after an inspection. It was found that the questions were clear and understandable. Finally, the research data were collected with the permission of the Human Research Ethics Committee with protocol number 2022/44 of Bolu Abant İzzet Baysal University.

Analysis of the data

Descriptive analysis and content analysis, which belong to the methods of qualitative data analysis, were used to analyse the participants' views. Data analysis consists of coding the data, identifying the themes, organizing the codes and themes, and finally defining and interpreting the results (Yıldırım & Şimşek, 2011). In the analysis phase, the interview forms were first analyzed, and the participants' views were grouped according to their commonalities. In the analysis phase, codes were assigned to principals (P1, P2) and teachers (T1, T2). In the results phase, the table indicates the number of times a concept or idea is repeated, and the salient views on the idea are presented objectively and discussed in the context of the relevant literature. In this way, the data were regularly interpreted and provided to the researchers (Yıldırım & Şimşek, 2011).

Validity and Reliability

To increase the validity and reliability of the study, the coding of the data during the analysis phase was performed independently by two researchers. The conclusions drawn by the researchers regarding the reliability of the data obtained during the research were reviewed, and the formula "agreement/ (agreement + disagreement) x100" proposed by Miles and Huberman (1994) was used to calculate the consensus rate. As a result, in analyzing the principal's and teachers' opinions, a consensus rate of 85% was obtained, which was sufficient agreement (Miles & Huberman, 1994). Since the principal and teachers were included in the study, the data were collected and recorded in written form. The recorded statements were read to the participants and confirmed a second time. It was not intended to be a complete count, as participants may have more than one opinion.

Results and Comment

In this part of the study, the results and comments related to the results are given.

The first sub-problem of the study considers the opinions of principals and teachers on the situation of principals having sufficient knowledge and skills to inspect classrooms.

Table 2. The knowledge and skills of principals for classroom inspection

Opinions of Principals	f	Opinions of Teachers	f
Yes, I am sufficient. Because		Yes, he/she is sufficient. Because	
I have experience and knowledge	4	he/she has improved himself/herself.	7
I am good at classroom management	2	he/she gives feedback(positive/negative)	4
I am proficient at teaching methods and techniques	2	he/she has a good communication	3
I have a master's degree.	1	he/she is good at classroom management	2
I follow scientific publications	1	he/she is good at methods and techniques	2
I attended in-service training.	1	he/she is suitable for the branch	2
No I am not sufficient. Because		he/she uses specific criteria (like a form)	1
I do not have experience and knowledge	3	No he/she is not sufficient. Because,	
I do not have inspection training	2	he/she is not suitable for the branch	6
I am having a branch-related trouble	2	he/she has no principal knowledge or qualifications	3
I do not know what to inspect and how to carry out an inspection	1	he/she does not know the student	2
		he/she has been alienated from the teaching job.	1
		he/she makes things difficult	1
		he/she has no experience	1
		he/she has poor direction	1

Examining Table 2 demonstrates that principals and teachers hold differing viewpoints regarding the knowledge and abilities required of principals while inspecting classrooms. When principals consider themselves as sufficient, they say, "I have experience and knowledge" (f=4), and teachers say "He/she has improved" (f=7). In the case of inadequacy, it was found that principals repeated the opinion "I have no experience and knowledge" (f=3), and teachers most often said "The branch is not suitable" (f=6). Examining Table 2, it is clear that principals and teachers have many different opinions about appropriateness or inappropriateness. Given the impact of inspections on the professional growth of teachers, both principals and teachers, it is essential to hold more positive views. On the other hand, both principals and teachers must indicate that principals experience inadequacies due to their branches. For this reason, it can be said that principals should be trained on this topic, focus on issues such as classroom management and communication during inspections, and guide teachers on these issues. Examples of principals' views on this topic include:

> *"Yes, I think so. I have gained knowledge by attending professional development seminars on classroom management. I have gained experience because I have been a principal for a long time"* (P1), *"I have not received any in-service training... Therefore, I do not think I have sufficient knowledge and skills."* (P10), Examples of teachers' views on this topic include: *"Yes, I think so. Because he has academic knowledge and skills. Even though it's not his area of expertise, he makes us feel good by doing the inspection in a positive way..."* (T15), *"... He may not be sufficient in the content of other classrooms during the inspections he carries out due to his branch. Especially in a foreign language and numerical classrooms."* (T20).

In the second sub-problem of the research, the opinions of the principal and teachers about whether there is a problem in the classroom inspection of the principals are included.

Table 3. Problems with principals' classroom inspection

Opinions of Principals	f	Opinions of Teachers	f
Yes, there is. Because		Yes, there is. Because,	
I am short of time	4	There are scorings and grades	2
Teachers are reluctant	3	The teacher is experiencing stress	1
Training required	1	The principal is not an expert in the field	1
No continuity	1	The principal does it out of necessity	1
Managing job is temporary	1	It may be a threat to principals	1
Inspectors must carry out inspections	1	Students are afraid of the principal in the classroom	1
Classrooms are too crowded	1	No, there is not.	16
No, there is not.	5		

Table 3 shows the opinions of the principals and teachers regarding the principals' inspection of the classrooms. When examining the table, it became clear that both principals (f=5) and teachers (f=16) expressed the opinion that "there is no problem". On the other hand, it became clear that principals expressed the opinion "I do not have enough time" (f=4) and teachers expressed the opinion "There are points and grades" (f=2) most frequently regarding the problems. It is considered important that principals, and especially teachers state that there are no problems in inspecting classrooms. From this, it can be inferred that teachers accept classroom observation and consider it a necessity. On the other hand, it can be said that principals have too many tasks and responsibilities, which means they do not spend enough time on classroom inspection.

As a result of the research, the following statements of principals can be used as an example:

> *"Since there are annexes with regulations on the issues to be considered when inspecting classrooms, I have no problems."* (P4), *"There are problems such as lack of time, not enough lessons, and teachers' reluctance."* (P7); The teachers' statements that can be used as examples are as follows: *"I do not think there is a problem. The control of an administrator within the school culture creates a comfortable teaching environment for me."* (T10), *"I think there is a problem because of grading and grading by inspection."* (T1).

The third sub-problem of the research is about the opinions of the principal and teachers about the appropriateness of the principal's inspection of the classrooms.

Table 4. Opinions about the classroom inspections carried out by the principals

Opinions of Principals	f	Opinions of Teachers	f
Suitable. Because		Suitable. Because,	
He/she gets to know the teacher better	7	He/she spends a lot of time with the teacher	9
He/she provides better motivation for the teacher	5	He/she may be more objective	1
Not suitable. Because		Not suitable. Because	
Inspections must be carried out by inspectors	2	The branch is not suitable	8
He/she may experience field-related trouble	1	He/she has no knowledge and experience	3
He/she may not be objective	1	He/she may discriminate between political views/ union	1
No sanctions	1	Lack of time	1
Lack of time	1	It creates psychological pressure	1
		The concept of inspection is wrong	1
		He/she scores teachers.	1

The opinions of the principals and teachers about the inspection of the classrooms conducted by the principals are shown in Table 4. Examining the table, it can be seen that the principals' statements "He gets to know the teacher better" (f=7), and the teachers' "He spends a lot of time with the teacher" (f=9) are among the most repeated opinions among the "suitable" views. On the other hand, it can be seen that among the "not suitable" opinions, the principals "Inspectors must do inspections" (f=2) and the teachers "The branch is not suitable" (f=8) are the most frequently expressed. Apart from these views, the views of principals and teachers are also different (Table 4). It is assumed that principals get to know teachers better because they spend more time with them, so principals and teachers agree on this view. However, it can be said that the participants frequently mention the problems of differences, lack of knowledge and skills and that the authorities should work more on these problems. Indeed, it can be assumed that an inspection that is carried out outside its purpose will reduce teachers' motivation and do more harm than good. Concerning the results, the statements of the principals that can be given as examples are as follows:

> "*Appropriate. Because the inspector sees the teacher for a few hours in the school. In the meantime, the teacher may be in a bad mood. The principal knows the teacher better.*" (P8), "*It should be done by inspectors or people with inspection training. No sanctions, no time*." (P6) Teachers' statements that can be cited as examples are as follows: "*... It is better when principals inspect because they know the school, students, and social environment better and spend more time with teachers...*" (T18), "*Not suitable. Because the branch is not suitable; besides, the principal entering the classroom and giving points creates psychological pressure on the teacher.*" (T1).

The fourth sub-problem of the research includes the opinions of the principal and teachers about the impact of classroom inspections on teacher development.

Table 5. The effect of school principals' classroom inspections on the development of teachers

Opinions of Principals	f	Opinions of Teachers	f
Yes, there is. Because		Yes, there is. Because	
He/she transfers experiences and provides guidance	5	Contributes to the Professional development	7
He/she contributes to the Professional development of teachers	4	increases morale and motivation	3
Collaboration and solidarity increase	1	Provides document order	3
Teachers' motivation increases	1	No, there is not. Because	
No, there is not. Because		He/she has no knowledge and experience	9
Unable to contribute to the development	2	Inspection time is limited	5
There is no objective evaluation	1	Not done seriously	3
		No inspection needed	2
		Creates stress	1
		He/she does not know the shortcomings	1
		He/she does not know the students	1
		He/she is not objective	1

Table 5 shows the principals' opinions about the impact of classroom inspection on teacher development. From the table, it can be seen that in terms of development, the principals' opinion was "to share experiences and provide guidance" (f=5). The teachers' opinion was most frequently "to contribute to professional development" (f=7). On the other hand, it can be seen that principals held the opinion of "not being able to contribute to development"

(f=2), and teachers held the opinion of "not having knowledge and experience". When examining the table, it was found that principals and teachers have different views. It can be assumed that the statement "Contributes to the professional development of teachers" in the opinions of principals and teachers and in the classroom visits of principals is important for education because it can be said that teachers who develop professionally are more productive for students. On the other hand, the fact that teachers primarily express problems with the knowledge and experience of principals can be interpreted to mean that principals need training in classroom visits. Parallel to the results, the following examples of statements made by principals can be cited:

> "*I see their deficits and guide them in this regard and share my experience. I increase their motivation by telling them about the positive aspects of the classroom*." (P5), "*It has no contribution to development. The fact that teachers have a close relationship with the principal has a negative effect on the objecti vity of the inspection*." (P7); Examples of teachers' statements include the following, "*The principal knows our pluses and minuses and gives us feedback, contributing to our development... It would be better if the principal supervises, even if someone from outside the institution supervises*." (T10), "*If the principals have sufficient knowledge and experience in inspection, it can benefit teachers. But these aspects are missing*." (T8).

In the fifth sub-problem of the research, the opinions of the principals and teachers about making instructional inspections more effective by the principal are included.

Table 6. Opinions on school principals' more effective classroom inspection inspection

Opinions of Principals	f	Opinions of Teachers	f
He/she should receive in-service training	9	Inspection time should be increased	7
His/her authority and influence should be increased	4	He/she should receive in-service training/should specialize	7
He/she should strive to improve himself/herself	1	He/she should have a good orientation	4
Ministry inspectors should be more understanding	1	He/she should not carry out an inspection	3
Inspections should be followed through MEBBIS	1	He/she should be objective and fair	3
A general evaluation form should be created	1	He/she should do it more seriously	2
		He/she should listen to teachers' opinions and suggestions	2
		He/she should give advance notice	2
		Reward and punishment systems should be implemented	1
		Documentation should be checked	1
		Inspections should be carried out by experts	1
		Inspections are carried out effectively	1
		He/she should specialize in inspection	1

Table 6 shows the opinions of principals and teachers regarding more effective inspections by principals. In examining the table, principals express the following opinions: Principals should receive in-service training (f=9), "influence and authority should be strengthened" (f=4). On the other hand, it can be seen that teachers express their opinions intensively on "Inspection time should be increased" and "They should receive in-service training/specialisation" (f=7). From the table, it can be seen that both principals and teachers think that principals should receive in-service training on classroom inspection. The reason for this can be seen in the fact that principals are not trained to inspect or that they generally do not receive post-graduate training in this area. Again, it can be said that teachers indicated that the time for inspecting classrooms should be longer because they could not fully show themselves in a classroom. The principals' views on conducting inspections more effectively, which can be cited as examples, are as follows:

> "*Principals should receive training on inspecting classrooms, their authority over rewards and punishments should be strengthened, and principals should strive to improve themselves.*" (P2), "*A system should be created in a digital environment and classroom inspections should be tracked through this channel...*" (P8) Teachers' views on conducting inspections more effectively, which can be cited as examples, are as follows: "*It is not appropriate to conduct classroom inspection only for one lesson and once a year...*" (T14), "*It would be better if professionals conducted the inspection of classrooms*" (T2), "*The school principal must first be objective and fair...*" (T6), "*The principal should not conduct an inspection because it is not sufficient*" (T4).

Conclusion and Discussion

In the first sub-problem of the research, the knowledge and skills of principals regarding classroom inspection were discussed with the opinions of principals and teachers. Principals for classroom inspections; In areas such as experience and knowledge, classroom management, teaching methods and techniques, teachers indicated that they have knowledge and skills for classroom inspections due to reasons such as self-improvement and feedback from principals. Ateşoğlu and Akbaşlı (2020) and Dönmez and Demirtaş (2018) support the research findings by concluding that teachers consider their principals to be experts and have sufficient knowledge and skills in classroom inspection, while Altunay (2020) states that principals feel competent in classroom inspection. Yeşil and Kış (2015) also supported the research findings by concluding that principals provided feedback after instructional inspection, and Koçak and Memişoğlu (2020) showed that principals showed positive communication during instructional inspections. On the one hand, principals expressed that they were inadequate in terms of classroom inspection because they lacked experience and knowledge. Teachers, in turn, indicated that principals lack sufficient knowledge and skills in inspecting classrooms due to factors such as industry differences. In their study, Köybaşı, Uğurlu, Ağıroğlu Bakır, and Karakuş (2017) concluded in their study that teachers in elementary schools do not consider their principals to be sufficient in terms of inspecting classrooms. Deniz and Saylık (2018) also showed similarities with the research findings by concluding that principals have problems such as knowledge and skills, communication, and different branches in inspection from teachers' perspective. Examining the relevant literature, we find that there are several studies (Balyer & Özcan, 2020; Beytekin & Tas, 2017; Dobbelaer, Prins & Dongen, 2013; Koç, 2018) that are similar to the research findings. In order for inspection to serve its purpose, principals must be qualified to inspect, use modern inspection techniques, and contribute to teacher training (Aydeniz Can & Gündüz, 2021). For this reason, it can be said that principals should focus on in-service courses to improve their knowledge and skills related to classroom inspection. In the second sub-problem of the research, the opinions of principals and teachers on the problems principals experience in inspecting classrooms were included, and it was concluded that both principals and teachers mostly do not experience problems. In Koçak and Memişoğlu (2020) study, some teachers concluded that principals did not experience problems in inspecting classrooms and supported the study's findings. The reason for this can be seen in the fact that the number of principals who have received in-service and postgraduate training in recent years has increased, which positively impacts classroom inspection. On the other hand, principals' lack of time and teachers' unwillingness for classroom inspections. In turn, teachers expressed problems such as evaluation and grading, the creation of stress, the fact that principals are not experts, and that they are a threat to principals. In Koç's (2018) study, teachers mentioned the problem of shortage of time among the problems of principal inspection, and Koşar and Buran (2019) concluded in their study that teachers' stress during principal inspection, principals' lack of knowledge in this field, and teachers' prejudice against principals are similar to the findings of this study. It can be seen that there are various studies in the relevant literature (Altunay, 2020; Balyer & Özcan, 2020; Bayar, 2017; Deniz & Saylık, 2018; Dönmez & Demirtaş, 2018; Koçak & Memişoğlu, 2020; Köybaşı et al., 2017) that support the research findings. The reasons for this may include the fact that school principals do not receive the necessary training in areas such as guidance, measurement, and evaluation related to classroom inspection (Tonbul & Baysülen, 2017; Akbaşlı, 2010) and there are disagreements between principals and teachers, such as political views and unions.

The third sub-problem of the research included the opinions about the inspection of the school principals. Principals and teachers overwhelmingly thought that principals' inspection of classrooms was appropriate because principals spend more time getting to know teachers better. When examining the literature, we find that there are many studies (Arslanargun & Göksoy, 2013; Ateşoğlu & Akbaşlı, 2020; Deniz & Saylık, 2018; Dönmez & Demirtaş, 2018; Yeşil & Kış, 2015) that support this view. In the research, teachers generally indicated that principals are experts, competent, and friendly in inspecting classrooms. Teachers expressed positive views about principals' inspection of classrooms because some principals improve in inspection, receive postgraduate training in this field, and establish positive communication with teachers. On the other hand, the research found that some principals and teachers did not think principals' classroom inspections were appropriate. While principals generally underlined that inspections should be undertaken by inspectors, teachers claimed that principals lacked the expertise, knowledge, and experience to inspect classrooms. Balyer and Özcan (2020) in their study stated that principals have problems with the ability to inspect classrooms, Deniz and Saylık (2018) that teachers have problems such as knowledge and skills for inspecting principals, and that their branch is not suitable, Dönmez and Demirtaş (2018) in their study about principals and teachers being subjective in audits, lack of information about auditing; Teachers, on the other hand, indicated that principals are not suitable for classroom inspection for reasons such as objectivity and ideological distinctions, and they supported the findings of the study. When examining the relevant literature, it was found that there are several studies (Altunay, 2020; Koçak & Memişoğlu, 2020; Koşar & Buran, 2019; Köybaşı et al., 2017) that conclude that school principals are not suitable for classroom inspection. Considering the impact of inspection on the quality and efficiency of teaching, it is thought-provoking that both

principals and teachers stay away from the topic of classroom inspection. For this reason, it can be said that the Ministry of Education should reconsider the inspection subject and provide further training to school principals, especially regarding the supervision of various branches.

The fourth sub-dimension of the study was the impact of classroom inspection on teacher development by principals. Principals and teachers generally indicated that classroom inspection by principals enables teachers to develop professionally, guide them, and motivate them. Akbulut Altınova and Gündüz (2021) concluded in their study that principals share knowledge and experience during classroom inspection and enable teachers to have more control. Koçak and Memişoğlu (2020) and Yeşil and Kış (2015) agreed with the research findings by concluding that classroom inspection of teachers contributes to their development mainly for reasons such as sharing experience and knowledge. İnspection of the employee should reveal and develop their abilities. This is because employees often do not recognize their talents.

For this reason, the inspector should support the development of the person by revealing their abilities during the inspection (Ünal 1989; cited in Taymaz, 2015). For this reason, the principal should recognize teachers who are important human resources during inspections, be aware of their talents, and provide opportunities for the development of these talents (Koçak & Memişoğlu, 2020). In the current study, the emergence of opinions that inspections contribute to teachers' development can be interpreted as those of school leaders. On the other hand, teachers expressed the opinion that principals' classroom inspections did not contribute to their development. Principals agreed that inspection was not objective, and teachers agreed that principals could not contribute to teacher development due to principals' lack of knowledge and experience, limited time, lack of seriousness, and stress. It can be seen in the relevant literature that there are many studies (Balyer & Özcan, 2020; Beytekin & Tas, 2017; Dobbelaer et al.; 2013; Deniz & Saylık, 2018; Koç, 2018; Köybaşı et al., 2017) that support this finding of the research. Hoy and Forsyth (2004) emphasized that the new inspection approach focuses on teacher development, so effective inspection is important for teacher development. It can be inferred that some principals cannot contribute to teacher development due to inadequacies such as knowledge and experience in inspecting classrooms. The final section of the study reflects the opinions of principals and teachers on how school leaders can be more effective in inspecting classrooms. The results show that principals frequently commented on in-service training and strengthening authority in classroom inspection, while teachers more frequently commented on increasing the duration of inspection, impartiality and fairness, seriousness and advance notice, and in-service training and specialization. The fact that both principals and teachers commented too frequently on in-service training can be interpreted to mean that there are too many problems in this regard. In fact, Koçak and Memişoğlu (2020) stated that principals should specialize in inspecting classrooms; Deniz and Saylık (2018) also concluded that principals should receive in-service training on inspection, and they agreed with the findings of the survey. Moreover, it is noteworthy that principals mainly expressed their views on strengthening influence and authority. It can be inferred that principals have authority issues, especially regarding punishment and reward in classroom inspection. On the other hand, teachers seem to draw attention to the time problem, especially in inspection. It can be said that the reason for this situation is that principals cannot spend much time on inspecting teachers due to their intensive work schedule. In addition, it is considered important for teachers to express the problems of impartiality and fairness above all. The reason for this is that some principals discriminate against teachers based on their political and union views and gender, which is reflected in classroom inspections. To prevent this, a universal and impartial evaluation form should be created for all school principals to use.

Recommendations

In parallel with the research findings, suggestions can be made following the study, such as ensuring that principals receive in-service training for classroom inspection, the importance of postgraduate training, extending the duration of inspection, conducting inspection according to objective criteria, expanding principals' authority to inspect classrooms, taking measures for inspection to ensure teachers' professional development, especially the active use of the reward system in inspection, inspection providing feedback to teachers.

Limitations

The study group of the research consisted only of principals and teachers working in independent secondary schools in the central district of Bolu, which can be counted among the research limitations.

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There are no notes and thanks for the research.

Author (s) Contribution Rate

The author made the entire contribution to the article.

Conflicts of Interest

There are no conflicts of interest in the article.

Ethical Approval

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The Relationship Between School Principals' Personality Traits and Spiritual Leadership Level

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The Relationship between School Principals' Personality Traits and Spiritual Leadership Level*

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Abstract

The research was designed in the relational survey model to reveal the relationship between school administrators' personalities and their spiritual leadership levels. The study was conducted with 160 school administrators. The Spiritual Leadership Scale and Five Factor Inventory were used. The data were analyzed using descriptive and inferential statistical techniques. School administrators showed personality traits related to the highest conscientiousness and the lowest neuroticism. School administrators exhibited the highest level of altruistic love, the lowest level of vision and faith in spiritual leadership. The spiritual leadership levels of school administrators on the basis of dimensions and in general were relatively high. The spiritual leadership levels of school administrators differed according to seniority and managerial position in the vision and faith dimensions. Positive and negative relationships at low and medium levels were found between the personality traits of school administrators and their spiritual leadership levels. Personality traits of school administrators affect their vision and faith, altruistic love and general spiritual leadership.

Keywords: Administrator, Leadership, Personality, Spiritual.

Introduction

The prolongation of the time spent by employees in the workplace in recent years causes them to seek opportunities to meet their needs such as meaning, purpose, belonging, and loyalty in the workplace (Fry & Nisiewich, 2013). Employees' expectations from their jobs have changed; prior to materiality, awareness of their potential as individuals, working in a good and ethical workplace and having an interesting job came to the fore. In this way, employees have become more concerned about having good colleagues, serving humanity, future generations, and the society they live in (Mitroff & Denton, 1999). Only financial gains cannot motivate employees; they also want to make a difference in the world and be involved in activities that are meaningful to them (Pfeffer, 2003). Employee needs, which started to differentiate in this way, made it necessary for organizations to transform to meet these needs. With this requirement, the workplace spirituality study area was born in the 1920s. Workplace spirituality is a field of study that emphasizes that employees have souls and minds that seek meaning and purpose in the workplace, need to feel connected to other employees, and feel like they belong to the community (Nair & Sivakumar, 2018). In other words, this field of study explores the changing employee needs and how these needs can be met in organizations, as mentioned above.

Spiritual leadership is a model of how the aforementioned employee needs - that is, the need to feel connected, the search for meaning and purpose and belonging to the community, can be met. (1) Vision, (2) hope and faith, and (3) altruistic love are three dimensions of spiritual leadership in this model (Fry, 2005). The vision dimension, which is one of the values, attitudes and behaviors of spiritual leadership revealed in the model, presents the future picture that conveys why individuals should strive to create the said future (Fry & Nisiewicz, 2013). The vision dimension includes spiritual leadership qualities such as attracting the main stakeholders, defining the purpose and how to achieve the goal, reflecting high ideals, supporting hope and faith, and determining the standard of excellence (Fry, 2005). The hope and faith dimensions reveal the unshakable belief in something despite the lack

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of evidence (Fry & Nisiewicz, 2013). According to Fry (2005), there are spiritual leadership qualities such as endurance, perseverance, doing whatever is necessary, reward or expectation of success, and excellence in the dimension of hope and faith. The hope of excellence and the faith in it are two of the most important issues that leaders look for (Kiral, 2020). The altruistic love dimension, on the other hand, is defined as the feeling of harmony with integrity and well-being born through the care, interest, and appreciation shown to oneself and others (Fry & Nisiewicz, 2013). In that case, according to the model presented in Fry (2005), spiritual leadership can be considered a process that includes the values, attitudes, and behaviors of the leader, which includes motivating and inspiring followers internally through faith, within the framework of the vision of an organizational culture that includes altruistic love. While the search for meaning and purpose of the leader and his/her followers can be met through the vision of an organization and the belief in this vision, through an organizational culture based on altruistic love, employees' needs to feel like they belong can also be met. In this way, it can be said that if people's needs are met, their commitment to the organization and its productivity will increase.

When studies on spiritual leadership (Fry, Latham, Clinebell, & Krahnke, 2017; Fry & Matherly, 2006 etc.) are examined, it can be said that spiritual leadership affects organizational commitment and productivity. It has been revealed in various studies (Chen, Yang, and Li, 2012; Malone & Fry, 2003 etc.) that the vision, hope and faith dimensions of spiritual leadership meet the needs of individuals, the search for meaning and purpose, and the sense of belonging, thus having positive results in organizational and individual terms. Educational organizations, like other organizations, need to be able to follow contemporary developments in order to fulfill their functions effectively and efficiently. Technological developments in recent years have provided students with the opportunity to easily access the subject they are curious about and compare different perspectives on a subject, while allowing teachers to prepare their teaching activities in a shorter time with different teaching strategies. On the other hand, questioning the meaning of schools, and the importance of teaching activities in schools, the meaning and purpose of being a teacher in an age where information can be accessed via the internet brought up the consideration of various concepts such as meaning, purpose, needs, and spiritual well-being in educational organizations (Aslan & Korkut, 2015). In the light of these developments, there may be a greater need than ever for school administrators who can lead both teachers and students, taking their spiritual well-being into account. However, first of all, it is important to identify school administrators who can exhibit spiritual leadership characteristics, and to determine which variables are related to spiritual leadership.

Bono and Judge (2004) found in their search in the PsycInfo database that 1.738, or 12 %, of the 15.000 articles published on leadership after 1990 included personality and leadership keywords. This clearly indicates a strong and growing interest in studies of leadership predispositions. As a matter of fact, according to Kiral and Basaran (2018), as long as human beings exist, the interest in leadership and leadership studies will continue to increase. Because societies need positive leaders who show positive personality traits, Kiral (2020) stated that there is an important relationship between personality traits and leadership and that people who show positive perfectionist personality traits exhibit sustainable excellent leadership. The meta - analysis study conducted by Judge, Bono, Ilies, and Gerhardt (2002) revealed that there is a relationship between five-factor personality traits and leadership.

Although the studies on the structure of personality are very old, the classification structure called “five factor personality traits” has been more accepted in recent years and has created an important revolution in the field of personality psychology. Five - factor personality traits in particular are broad personality structures that manifest more specific traits. The extroversion dimension refers to being friendly, sociable, active, and inclined to seek excitement; the agreeableness dimension refers to being gentle, reliable, honest, and warm; the conscientiousness dimension includes being focused on success and reliability; the neuroticism dimension refers to a tendency to be anxious, depressed, fearful, or sad; and the openness dimension refers to being creative, dreamy, and intuitive (Judge & Bono, 2000). As can be seen, of these mentioned dimensions, it can be said that extroversion, agreeableness, conscientiousness, and openness can be related to positive leadership. It is very difficult for a non-extrovert person to come to the fore as a leader and to show himself. In addition, people do not want to go behind a person who does not take responsibility and is not trusted. Trust is one of the important personality traits that those who follow the leader desire in the leader. The leader wants to move towards the future he or she dreams of in harmony with their followers. The more he or she can convince people of their dream, the more people will follow them. A leader can continue his/her existence as long as he or she makes people believe in their dreams. It is very difficult for those who show neurotic personality traits to be accepted as leaders in society. According to Judge et al. (2002), the most consistent personality trait in relation to leadership is extroversion; then, respectively, conscientiousness, openness, and agreeableness. Considering that those who get high scores in the agreeableness dimension will exhibit characteristics such as passivity and mildness, it can be said that it is difficult for them to emerge as leaders.

In general, it can be said that spiritual leadership is a leadership style that has recently begun to attract attention and this situation has started to manifest itself in educational organizations through conducted studies (Akinci, 2017; Bozkus & Gunduz, 2016; Holden, 2017; Khani & Arani, 2013). These studies are mostly concerned with the results of spiritual leadership. However, it is clear that personality traits are related to leadership. Particularly, interest in research on the personality traits of effective leaders has revived (De Hoogh, Den Hartog, & Koopman, 2005). As a matter of fact, when the literature is examined, the relationships between transformational leadership and personality (Judge & Bono, 2000), personality and ethical leadership (Ozbag, 2016), charismatic/transformational leadership and personality (De Hoogh et al., 2005) and personality and leadership styles (Civgaz-Kazancioglu, 2018; Yalcinkaya, 2017) have been revealed. As can be seen, the relationship between personality traits and many leadership styles has been examined. However, it can be said that the relationship between the personality traits of school administrators, who are one of the most important leaders of education in schools, and their display of spiritual leadership values, attitudes, and behaviors hasn't been examined. Nevertheless, knowing which personality traits are related to the spiritual leadership of school administrators and whether these personality traits predict their spiritual leadership or not can facilitate the work of policy makers and practitioners in determining the managers who can display the values, attitudes, and behaviors in advance, making arrangements accordingly, and increasing the quality of education. In addition to this, it is hoped that this study will guide researchers as the first to deal with spiritual leadership and personality traits together in the field of educational administration. The purpose of this study is to reveal the relationship between personality traits and spiritual leadership levels of school administrators working in public secondary schools and their status according to various variables discussed. In line with this general purpose, answers to the following questions were sought:

1- How are the personality traits of school administrators based on their dimensions?
2- Do the personality traits of school administrators show a significant difference according to gender?
3- How are the spiritual leadership levels of school administrators based on dimensions and in general?
4- Do the spiritual leadership levels of school administrators differ according to the variables of gender, age, seniority, educational status, number of teachers in the school, managerial position, and the school type?
5- Is there a significant relationship between the personality traits of school administrators and their spiritual leadership levels?
6- Do the personality traits of school administrators predict their spiritual leadership levels?

Method

Research Model

This study, which aims to determine the relationship between the personality traits and spiritual leadership levels of school principals, was designed in the correlational survey model (Buyukozturk, Kilic-Cakmak, Akgun, Karadeniz & Demirel, 2020; Karasar, 2020).

Population and Sample

The target population of this study consists of 268 school administrators working in high schools (Anatolian, Vocational and Technical Anatolian, and Anatolian Imam-Hatip High Schools) in the province of Aydin in the 2017-2018 academic year (Aydın Provincial Directorate of National Education, 2017). Stratified and random sampling methods were used in the research. While distributing the sample according to 17 districts, the ratio of the number of administrators in each district within the total target population was first determined. Later, the number of administrators in each district was tried to be represented in the sample at the rate it is represented in the target population. The table of sample sizes was used to determine the number of samples. In the table, it is determined that the research will represent the target population consisting of 268 administrators with 159 high school administrators at the level of $\alpha = .05$ significance and 5 % tolerance (Ural & Kılıc, 2018). The sample was composed of 191 school administrators, taking up 20% more of the sample due to the small number of school administrators and the losses that may occur during the data collection process. Schools in the districts were determined using the simple random sampling method. By going to the designated schools, the data collection tool, for which permission was obtained from the Aydın Provincial Directorate of National Education was given to 191 school administrators who wanted to participate in the study voluntarily and to fill in the necessary explanations. In some cases, the administrator was waiting for the scales; in other cases, the scales were left with the administrators and then received. However, 16 data collection tools that were not filled in properly (left

incomplete, not filled in) and 15 data collection tools with extreme / outlier values were excluded from the study (Buyukozturk et al., 2020). The research was conducted using 160 data collection tools.

It was revealed that 38 (23.8 %) of the school administrators participating in the study are female, 122 (76.2 %) are male; 34 of them (21.3 %) are 40 years and under, 85 of them (53.1 %) are in the 41-50 age range and 41 of them (25.6 %) are 51 years and over; 38 of them (23.8 %) have a professional seniority of 15 years or less, 83 of them (51.8%) have a professional seniority of 16-25 years, 39 (24.4%) have a professional seniority of 26 years or more; 134 of them (83.7 %) are undergraduate and 26 of them (16.3 %) are graduate; 34 of them (21.3 %) are working schools where the number of teachers in schools are 25 or less, 75 of them (46.8 %) are working in schools where 26-50 teachers work, 51 of them (31.9 %) are working schools where the number of teachers in the school are 51 or more, 38 (23.8 %) of them were principals, 122 (76.2 %) were assistant principals; 61 (38.1 %) were employed in Anatolian High School, 80 (50 %) in Vocational and Technical Anatolian High School and 19 (11.9 %) in Anatolian Imam Hatip High School.

Data Collection Tools

In the study, data was collected with a data collection tool consisting of two parts. In the first part of the data collection tool, there is the "Personal Information Form", in the second part, there is the "Spiritual Leadership Scale" and the "Five Factor Inventory".

Personal Information Form: In the personal information form, there were questions about the secondary school principals' gender, age, seniority, educational status, number of teachers in the school, managerial position, and school type.

Spiritual Leadership Scale: In order to reveal the spiritual leadership levels of school administrators, the vision, hope/faith and altruistic love dimensions of the "Spiritual Leadership Scale" developed by Malone and Fry (2003) and adapted into Turkish by researchers were used in the study. Necessary permissions were obtained from the researchers to adapt the scale. The original form of the spiritual leadership scale developed by Malone and Fry (2003) consists of 17 items in three sub-dimensions: vision (5 items), hope/faith (5 items), and altruistic love (7 items). The scale, where there is no reverse-coded item, is a 5-point Likert [I never agree (1) - I totally agree (5)] type. In adaptation studies, the necessary sensitivity has been shown by considering the problems that may arise due to the differences between cultures. First of all, the original form of the spiritual leadership scale was translated into Turkish by the researchers and language experts (n: 2). The translation obtained was translated back to English by different language experts (n: 2). By comparing the opinions put forward, a common result has been reached for each item. When the scale was translated into Turkish, it was seen that there were items with the same meaning, indicating two judgments. Items with the same meaning were removed from the scale. On the other hand, items that are seen as stating two jurisdictions have been rearranged so that each item states a judgment. Thus, a new draft of 18 items was obtained, consisting of 4 items in the vision dimension, 4 items in the hope and faith dimension, and 10 items in the altruistic love dimension. Then, the scale obtained was presented for the opinion of education administration field experts (n: 3). According to their views, after some changes were made and a consensus was reached, the "Spiritual Leadership Scale" was given its final form for application. Thus, the face validity of the scale was provided (Kaptan, 1998). Exploratory and confirmatory factor analyses were used to determine the construct validity of the spiritual leadership scale.

As a result of EFA, a new structure with two factors, different from the three-dimensional structure of the Spiritual Leadership Scale, emerged. In addition, 8 items have low item discrimination; factor load below .40 and overlapping in different dimensions (Buyukozturk, 2019), were removed from the scale, and five items remained in both dimensions. According to the literature, the scale was named the Spiritual Leadership Scale with, its dimensions being the vision and faith dimension and the altruistic love dimension. Information about the factor loads of the scale and the variance rates they explain are given in Table 1.

When Table 1 is examined, it is found that the vision and faith subscale consists of 5 items, explains 28.68% of the total variance, and the factor load values range is between .65 and .78. It was determined that the altruistic love subscale consists of 5 items, explains 28.36% of the total variance, and the factor load values range is between .42 and .90. It was found that the eigen values of the scales were 3.90 for the vision and faith subscale and 1.81 for the altruistic love subscale.

Table 1. Factor loads and explained variance values of the spiritual leadership scale

Factor	Item No	Item	Factor Load	Explained Variance
Vision and faith	7.	Since I believe in all the ideals of my school, I put a lot of effort into their realization.	.76	28.68%
	8.	I demonstrate my faith in my school's mission by doing anything that can help us succeed.	.65	
	9.	I'm committed to my school's vision.	.70	
	11.	My school's vision reveals potential in me.	.73	
	12.	My school vision allows me to perform at my best.	.78	
Altruistic Love	10.	As a manager, I have the courage to protect the rights of my employees.	.42	28.36%
	13.	I treat my employees kindly.	.84	
	14.	I am understanding towards my employees.	.90	
	15.	I take care of my employees' problems.	.78	
	18.	I care about my employees.	.65	

The validity of the two-dimensional structure resulting from EFA was tested by confirmatory factor analysis. After the Satora-Bentler normality correction (Byrne, 1994) and the proposed modification, the goodness of fit indexes of the 10-item scale ($\chi^2 = 63.92$, df = 33, p = 0.00, χ^2 / df = 1.93, SRMR= .07, RMSEA= .08; CFI= .96, NFI= .88, NNFI= .95, GFI= .92) were found to be suitable (Hu and Bentler, 1999). Factor loads for the model obtained are shown in Figure 1.

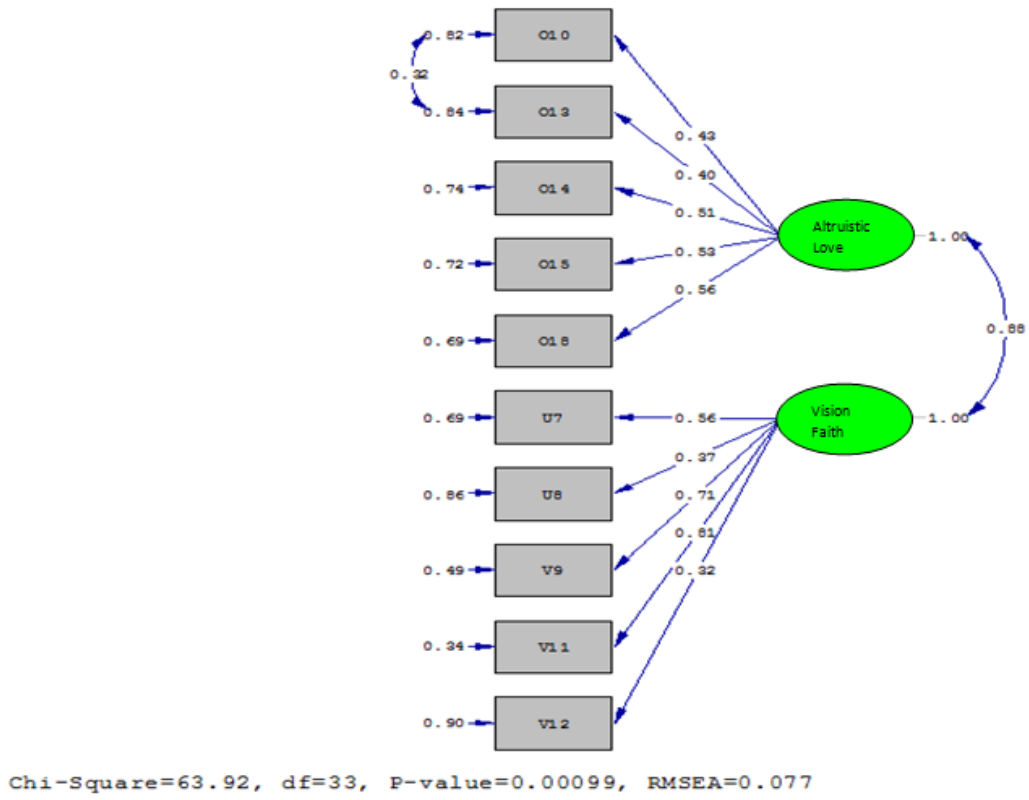

Figure 1. Confirmatory factor analysis of the spiritual leadership scale in the sample of school administrators

When Figure 1 is examined, it can be said that the factor loadings of the emerging model of the spiritual leadership scale are appropriate. In addition, it was determined that t-values were between 19.03 and 32.20, and all tests were statistically significant according to the results of the t-test (bottom-top 27% groups) for the independent sample

conducted to examine the distinctiveness of the items of the spiritual leadership scale ($p < .001$). According to these values, it can be said that the scale is valid (Cokluk, Sekercioglu, & Buyukozturk, 2018; Kline, 2005). The total internal consistency coefficients of the scale were found to be .82, .79 for vision and faith, and .80 for altruistic love. According to these values, it can be said that the Turkish form of the scale is quite reliable (Tavsancil, 2019).

Five Factor Inventory: In this study, the "Five Factor Inventory," developed by Benet-Martinez and John (1998) and adapted into Turkish by Sumer and Sumer (2005), was used to measure the personality traits of school administrators. The Five Factor Inventory consists of 5 dimensions (neuroticism, extroversion, agreeableness, openness, and conscientiousness) and 44 items (16 with reverse code). In the inventory, there are 9 items that measure agreeableness and conscientiousness, 8 items that measure extroversion and neuroticism, and 10 items that measure the dimension of openness. The scales in the inventory are of the 5-point Likert [I strongly disagree (1) - I completely agree (5)] type. The Five Factor Personality Inventory was used in studies on education (Celebi & Ugurlu, 2014; Gokler & Tastan, 2018) and specifically in the sample of school administrators (Koca, 2016). In these studies, it was determined that the Cronbach Alpha reliability values of the scale ranged between .70 and .79. Within the scope of this study, a validity study was not conducted, but the Cronbach Alpha reliability values of the Five Factor Inventory were examined. It was found that the Cronbach alpha reliability coefficients of the scales of the Five Factor Inventory ranged from .69 to .77. According to these values, it can be said that the scale is reliable (Tavsancil, 2019).

When the dimensions and items of the scale are examined, the extroversion dimension includes many personality traits such as mobility, liking to have fun, self-confidence, affection, being friendly, talkative, and sociable (Item 1: Talkative). The agreeableness dimension includes personality traits such as reliability, sincerity, friendliness, kindness, and cooperativeness (Item 7: helpful and non-selfish). In the dimension of conscientiousness, there are expressions to measure personality traits such as diligence, neatness, diligence, planned programmability, and meticulousness (Item 3: Doing a job completely). In the dimension of neuroticism, personality traits such as tension, insecurity, anxiety, pessimism, boredom, and a changeable nature were present (Item 4: depressive and sad). In the dimension of openness to development, there are expressions to measure personality traits such as creativity, sensitivity to art and beauty, having rich and complex emotional lives, and being intellectually curious (Item 5: originality, producing new ideas).

Data Analysis

The demographic data obtained within the scope of the research has been analyzed with frequency and percentage. Personality traits and spiritual leadership levels of school administrators have been analyzed using the mean and standard deviation. Whether the spiritual leadership levels of school administrators differ significantly according to independent variables (gender, age, seniority, number of teachers in the school and managerial position) and whether the personality traits of school administrators differ significantly according to gender (according to the literature, only gender was taken because personality traits are related to gender) was found by parametric difference tests. Which groups caused the difference in the ANOVA test was tested with the Scheffe test, one of the multiple comparison test techniques. Whether or not the spiritual leadership level of school administrators differentiated according to the variables of educational status and the type of school they worked in ($n < 30$) or not was determined by nonparametric difference tests (Mann-Whitney U and Kruskal- Wallis). Whether there is a significant relationship between the personality traits of school administrators and their spiritual leadership levels was tested with the Pearson Moments Multiplication Correlation Coefficient. The effect of the personality traits of school administrators on their spiritual leadership level was tested by Multiple Regression Analysis. The correlation coefficient was interpreted as low (.00- .29), medium (.30 - .69), and high (.70 - 1.00) (Kiral & Kacar, 2016).

Findings

Findings Regarding Personality Traits and Gender Variables of School Administrators

The descriptive statistics of the school administrators' personality traits according to their answers to the Five Factor Inventory and the comparison by gender are shown in Tables 2 and 3.

Table 2. Descriptive Statistics of School Administrators' Mean Scores Regarding Personality Traits Dimensions

Dimensions	n	$\bar{X}$	Sd	Ranking
Conscientiousness	160	4.34	.53	1
Agreeableness		4.33	.45	2
Openness		4.04	.52	3
Extroversion		3.79	.58	4
Neuroticism		2.52	.66	5

As seen in Table 2, school administrators have the personality traits of conscientiousness ($\bar{X}$ = 4.34), agreeableness ($\bar{X}$ = 4.33), openness ($\bar{X}$ = 4.04), extraversion ($\bar{X}$ = 3.79) and neuroticism ($\bar{X}$ = 2.52), respectively.

Table 3. Comparison of Personality Traits of School Administrators According to Gender

Dimensions/Variables	Gender	n	$\bar{X}$	Ss	Sd	t	p
Extroversion	Female	38	3.94	.69	158	1.54	.13
	Male	122	3.75	.53			
Agreeableness	Female	38	4.37	.46		.69	.49
	Male	122	4.32	.45			
Conscientiousness	Female	38	4.32	.51		.25	.80
	Male	122	4.34	.54			
Neuroticism	Female	38	2.59	.65		.73	.47
	Male	122	2.50	.66			
Openness	Female	38	4.10	.54		.75	.45
	Male	122	4.02	.52			

As can be seen in Table 3, personality traits of school administrators do not differ according to the gender variable on the extroversion [$t_{(158)}$= 1.54, p>.05]; agreeableness [$t_{(158)}$= .69, p>.05]; conscientiousness [$t_{(158)}$= .25, p>.05]; neuroticism [$t_{(158)}$= .73, p>.05] and openness [$t_{(158)}$= .75, p>.05] dimensions.

Findings Regarding the Spiritual Leadership Levels of School Administrators and Various Variables

The findings obtained from the statistics regarding the spiritual leadership levels of school administrators and whether these levels differ according to gender, age, seniority, educational status, number of teachers in the school, managerial position, and school type are given in Tables 4 and 5.

Table 4. Descriptive Statistics of the Spiritual Leadership Levels of School Administrators

Dimensions	n	$\bar{X}$	Sd	Ranking
Altruistic Love	160	4.68	.37	1
Vision and Faith		4.32	.46	2
General Spiritual Leadership		4.50	.35	

As seen in Table 4, school administrators mostly have altruistic love (X = 4.68), then vision and faith ($\bar{X}$ = 4.32) values, attitudes, and behaviors. School administrators' spiritual leadership levels, on the basis of dimensions and in general, are relatively high ($\bar{X}$ = 4.50).

Table 5. Analysis of the Spiritual Leadership Levels of School Administrators According to Various Variables

Dimensions/ Variables	Gender		Age		Seniority		Educational status		Number of teachers		Managerial position		Type of school	
	t	p	F	p	F	p	U	p	F	p	t	p	X^2	p
Vision and Faith	1.17	.25	.07	.93	3.63	.03*	1595.50	.49	1.73	.18	2.12	.04*	.43	.81
Altruistic Love	.97	.34	.23	.80	.22	.80	1539.50	.33	2.53	.08	.76	.45	1.93	.38
General Spiritual Leadership	1.21	.28	.09	.92	.15	.15	1698	.84	2.97	.06	1.81	.07	.07	.97

***** p<.05

As can be seen in Table 5, the spiritual leadership levels of school administrators do not differ significantly on the basis of dimensions and generally according to gender, age, educational status, the number of teachers in the school, and the type of school.

According to the seniority variable, the level of spiritual leadership exhibited by school administrators on the altruistic love dimension [$F_{(2-157)} = .22$; p> .05] and as general spiritual leadership [$F_{(2-157)} = .15$; p> .05] did not show a statistically significant difference. However, a statistically significant difference was found in the dimensions of vision and faith [$F_{(2-157)} = 3.63$; p<.05]. A Scheffe multiple comparison test was conducted in order to determine between which groups the significant difference occurred. According to the test results, the average score of school administrators with seniority of 26 years or more in the vision and faith dimension is higher than that of those with seniority between 16 and 25 years. The calculated effect size was found to be small ($\eta^2 = .04$). The change in vision and faith dimension is explained by a 4% seniority variable. According to the managerial task variable, the levels of spiritual leadership exhibited by school administrators did not show a statistically significant difference in altruistic love [$t_{(158)} = .76$, p>.05] and general spiritual leadership [$t_{(158)} = 1.81$, p>.05]. However, a significant difference was found in the dimension of vision and faith [$t_{(158)} = 2.12$, p <.05] according to the managerial task variable. In the dimension of vision and faith, the average score of school principals ($\bar{X} = 4.58$) was found to be significantly higher than the average score of school administrators working as assistant principals ($\bar{X} = 4.28$). When the size of the effect of the difference is examined, this effect (d = .39) is small. The difference between the average scores in the vision and faith dimensions according to the managerial task variable is .39 standard deviation.

Findings Regarding the Relationship between Personality Traits of School Administrators and Their Spiritual Leadership Levels

The correlation test results for the relationship between the personality traits of school administrators and their spiritual leadership levels are given in Table 6.

Table 6. The Relationship Between Personality Traits of School Administrators and Their Spiritual Leadership Levels

Dimensions	EXT	AGR	CON	NEU	OPE	VIF	ALT	GSL
EXT	-							
AGR	.33**	-						
CON	.46**	.41**	-					
NEU	-.36**	-.34**	-.31**	-				
OPE	.47**	.30**	.35**	-.22**	-			
VIF	.27**	.13**	.31**	-.20**	.19**	-		
ALT	.14**	.21**	.14**	-.21**	.29**	.39**	-	
GSL	.25**	.20**	.28**	-.25**	.28**	.87**	.79**	-

EXT: Extroversion; AGR: Agreeableness; CON: Conscientiousness; NEU: Neuroticism; OPEN: Openness; VIF: Vision and Faith; ALT: Altruistic Love; GSL: General Spiritual Leadership. ** p<.01

When Table 6 is analyzed, it is seen that the relationship of the secondary school administrators' extroversion personality trait with agreeableness, conscientiousness, and openness personality traits is positively medium; with neuroticism personality trait is negatively medium; and the relationship with altruistic love dimension, vision and faith dimension, and general spiritual leadership are positively low and significant. It is found that the relationship of the secondary school administrators' agreeableness personality trait with conscientiousness and, openness personality traits is positively medium; the relationship with neuroticism personality trait is negatively medium; and the relationship with vision and faith dimension, altruistic love dimension, and general spiritual leadership are positively low and significant. It is observed that the relationship of secondary school administrators' conscientiousness personality traits with openness personality trait is positively medium; with neuroticism personality trait, it is negatively medium; with altruistic love dimension, it is positively low; with vision and faith dimension, it is positively medium; and with general spiritual leadership is positively low and significant. It is found that the relationship of secondary school administrators' neuroticism personality traits with openness personality trait, vision and faith dimension, altruistic love dimension, and general spiritual leadership is negatively low and significant. It is detected that the relationship of secondary school administrators' openness personality traits with the vision and faith dimension, the altruistic love dimension, and general spiritual leadership is positively low and significant. It is seen that the relationship between secondary school administrators' vision and faith dimension scores and altruistic love dimension scores is positively medium; general spiritual leadership is positively high and significant. It is observed that the relationship between the altruistic love dimension and general spiritual leadership is positively high and significant.

Findings Related to the Prediction of Spiritual Leadership Levels by Personality Traits of School Administrators

The findings obtained regarding whether the spiritual leadership levels of school administrators are predicted on the basis of dimensions and generally by their personality traits are given below.

The results of the multiple regression analysis conducted to determine whether the vision and faith levels of school administrators are predicted by personality traits are given in Table 7.

Table 7. Multiple Regression Analysis Results Related to the Prediction of Vision and Faith Level

Variables	B	Standard Error B	β	t	p	Binary r	Partial r
Constant	3.324	.51	-	6.52	.000	-	-
Extroversion	.099	.07	.125	1.33	.18	.27	.10
Agreeableness	-.055	.09	-.054	-.63	.53	.13	-.05
Conscientiousness	.194	.08	.224	2.48	.01	.31	.20
Neuroticism	-.068	.06	-.097	-1.16	.25	-.20	-.09
Openness	.046	.08	.053	.60	.55	.19	.05
$R=.355; R^2=.126$	$F_{(5;154)} = 4.429; p=001$						

As can be seen in Table 7, it was found that the linear combination of all dimensions of the five-factor personality traits model of school administrators predicted the vision and faith dimension significantly [$R = .36$; $R^2 = .13$; $F_{(5; 154)} = 4.43$; $p < .01$]. Independent variables explained 13 % of the variance regarding the vision and faith dimension. When the t test related to regression coefficient was examined, it was found that only the conscientiousness personality traits significantly predicted the vision and faith dimension, but the other dimensions of personality traits didn't predict it.

The results of the multiple regression analysis conducted to determine whether the altruistic love levels of secondary school principals are predicted by personality traits are given in Table 8.

Table 8. Multiple Regression Analysis Results Related to the Prediction of Altruistic Love Level

Variables	B	Standard Error B	β	t	p	Binary r	Partial r
Constant	3.964	.41	-	9.653	.000	-	-
Extroversion	- .038	.06	-.060	-.63	.53	.14	-.05
Agreeableness	.086	.07	.106	1.22	.22	.21	.09
Conscientiousness	-.006	.06	-.008	-.09	.93	.14	-.01
Neuroticism	-.081	.05	-.144	-1.71	.09	-.21	-.13
Openness	.178	.06	.253	2.88	.01	.29	.22
$R=.340; R^2=.116$	$F_{(5;154)} = 4.031; p=002$						

When Table 8 was analyzed, it could be seen that the linear combination of all dimensions of the five-factor personality traits model of school administrators predicted the altruistic love dimension significantly [$R=.34$; $R^2=.12$; $F_{(5; 154)}= 4.03$; $p<.01$]. Independent variables explained 12 % of the variance regarding the altruistic love dimension. When the t test related to the regression coefficient was examined, it was found that only openness personality traits significantly predicted the altruistic love dimension, but the other dimensions of personality traits didn't predict it.

The results of a multiple regression analysis conducted to determine whether the spiritual leadership level of secondary school principals is predicted by personality traits are given in Table 9.

Table 9. Multiple Regression Analysis Results Related to the Prediction of Spiritual Leadership Level

Variables	B	Standard Error B	β	t	p	Binary r	Partial r
Constant	3.644	.38	-	9.56	.000	-	-
Extroversion	.031	.06	.051	.55	.582	.25	.04
Agreeableness	.015	.07	.020	.24	.813	.20	.02
Conscientiousness	.094	.06	.144	1.61	.109	.28	.12
Neuroticism	-.074	.04	-.141	-1.70	.092	-.25	-.13
Openness	.112	.06	.169	1.96	.052	.28	.15
$R=.374; R^2=.140$	$F_{(5;154)} = 5.005; p=000$						

As can be seen in Table 9, it was found that the linear combination of all dimensions of the five-factor personality traits model of school administrators predicted the spiritual leadership dimension significantly [$R=.37$; $R^2=.14$; $F_{(5; 154)}= 4.43$; $p<.01$]. Independent variables explained 14% of the variance regarding spiritual leadership. However, when a t test related to the regression coefficient was examined, it was found that any of the personality traits didn't predict spiritual leadership significantly.

Discussion, Conclusion and Recommendations

According to school administrators, the most prominent personality traits are conscientiousness, followed by agreeableness, openness, extroversion, and neuroticism. There are studies (Koca, 2016; Yildizoglu, 2013) in which the conscientiousness personality trait of school administrators is at a high level in the literature. Yildizoglu (2013) found the personality traits of school administrators to be agreeableness, openness, conscientiousness, extroversion and neuroticism. Koca (2016), on the other hand, identified the personality traits of school administrators as openness, agreeableness, conscientiousness, extroversion, and neuroticism, respectively. As in Yildizoglu's (2013) and Koca's (2016) studies, conscientiousness, agreeableness and openness are the first three personality traits of school administrators. It can be said that the roles, responsibilities, and workloads of school administrators have increased in a changing and globalizing world. Considering this situation, it becomes more important than ever before that school administrators are planned, decisive, open to innovations, able to think multi-dimensionally, that is, individuals who have the personality characteristics of conscientiousness and

openness. So much so that in the changing and globalizing world, roles such as social service expertise, coaching, and community leadership have become expected from school administrators (Balyer, 2012). For this reason, it is important for school administrators to be in contact with students, teachers, parents, and the school; to cooperate with other institutions; and to have developed empathy skills. In other words, it is important for school administrators to be individuals with agreeable personality traits. In this study, the reason for the high conscientiousness personality trait of administrators may be that people with a high level of conscientiousness have been promoted to administrative positions. As a matter of fact, as a result of studies examining the relationship between Five Factors and job performance, it has been found that employees who get high scores from the dimension of conscientiousness are perfect employees, and it is taken for granted that they are successful (Burger, 2004/2016). The low neuroticism personality trait of school administrators in the study is a positive situation. In fact, neuroticism is associated with low professional satisfaction (Koca, 2016) and low job satisfaction (Demirci, 2003). For this reason, it can be thought that people with a dominant neuroticism trait cannot rise to the position of administrators, and the scores of neuroticisms of those who have undertaken management tasks are low. In addition, it can be said that school administrators are calm people who do not have excessive emotional reactions.

The personality traits of school administrators did not vary significantly according to gender. In the literature, there are studies similar to the results of this research as well as different studies. Goksal (2017) concluded that the personality traits of teachers do not differ according to gender. Yildizoglu (2013) found in her study that there was a significant difference in the extroversion and openness personality traits of school administrators in favor of females, but similar to this study, there was no difference in the personality traits of conscientiousness, agreeableness, and neuroticism. In his study, Koca (2016) found that there was no significant difference in the agreeableness and conscientiousness personality traits of school administrators according to gender, but there was a significant difference in favor of female administrators in the personality traits of extroversion, openness, and neuroticism. As can be seen, while personality traits differ according to gender in some studies, in some studies, including this study, personality traits do not differ according to gender. The reason for this may be that the studies were conducted with samples living in different regions and having different socio-cultural backgrounds. As a matter of fact, socio-cultural factors dictate how it is appropriate for women and men to behave and thus cause personality traits to differ according to gender (Feingold, 1994). In this respect, it can be seen that in samples with a socio-cultural background where gender roles are not emphasized much, and the characteristics attributed to men and women are not separated by sharp boundaries, personality traits do not differ significantly according to gender.

It has been determined that school administrators exhibit the most altruistic love, followed by vision and faith in their spiritual leadership values, attitudes, and behaviors. School administrators' altruistic love, vision/faith, and general spiritual leadership levels are relatively high. Another study in which school administrators evaluated their own spiritual leadership levels was not found within the scope of the literature reached. However, in the current education system, school administrators are actually teachers who have taken on the role of administrators. Aslan and Korkut (2015) evaluated teachers' views on spiritual leadership at school and found that their views on spiritual leadership in all dimensions were high, similar to this study. As can be seen, both administrators' and teachers' views on spiritual leadership at school are the same. School administrators see their spiritual leadership levels as high. Also, teachers, another stakeholder of the school, see the spiritual leadership levels of the school administrators, with whom they work together, as high. This result supports the findings of this research. The reason for the high level of general spiritual leadership of school principals in the study may be that school administrators care about increasing the sense of belonging of the main stakeholders of the school. As a matter of fact, with the effect of socio-economic, social and political changes, the desire of the school environment (such as parents and local administrations) to participate in the decisions taken in schools and their roles in financing education is increasing (Gumuseli, 2001). It can be said that the school environment's ability to assume these roles properly depends on their relationship with the school and whether they feel commitment to the school. For this reason, it is important to increase the sense of committed to the school environment. School administrators who display a high level of spiritual leadership can make the stakeholders of the school environment feel that they are interested, appreciated, and understood. Thus, a school culture that is more committed can be created (Fry, 2003).

In addition, at high level of spiritual leadership can lead to positive organizational outcomes such as productivity (Fry & Matherly, 2006; Fry et al., 2017), organizational learning capacity (Khani & Arani, 2013) and performance (Javanmard, 2012; Salehzaadeh, Pool, Lashaki, Dolati & Jamkhaneh, 2015; Yang, Liu, Wang & Zhang, 2017). For this reason, it can be said that the high level of general spiritual leadership of school administrators will increase the quality of the services provided in the school and will affect its functioning positively.

School administrators' spiritual leadership levels do not differ according to gender, age, educational status, the number of teachers at the school or the type of school. It can be said that gender, age, educational status, type of school, and the number of teachers in the school do not affect the spiritual leadership levels of school administrators. Similarly, in the study conducted by Akıncı (2017), where the spiritual leadership values, attitudes, and behaviors of school administrators were evaluated by teachers, it was found that the perception of spiritual leadership did not differ according to gender, age, educational status, or the number of teachers in the school, but it did differ according to the type of school. He found that the perceptions of spiritual leadership of teachers working in Imam-Hatip High School were higher than those in other schools in his study. It has been stated that this may be due to the fact that Imam-Hatip high schools are project schools established to realize certain ideals and that the employees generally adhere to these ideals. In another study conducted by Bozkus and Gunduz (2016) in which the spiritual leadership values, attitudes, and behaviors of school principals were evaluated by teachers, it was found that the perception of spiritual leadership did not differ according to educational status or gender; however, it has been revealed that it varies according to the number of teachers working at the school. As can be seen, these variables differ according to the sample group. Therefore, it can be mentioned that supportive studies evaluating school administrators' perceptions of spiritual leadership are needed.

The spiritual leadership levels of school administrators did not show a significant difference in altruistic love and general spiritual leadership dimensions according to seniority. However, in the vision/faith dimension of spiritual leadership, school administrators with seniority of 26 years or more are better than school administrators with seniority of 16-25 years. Akinci (2017) concluded that teachers' perceptions of spiritual leadership regarding school administrators did not change according to seniority, while Bozkus and Gunduz (2016) concluded that teachers with seniorities between 16 and 20 years had higher perceptions of spiritual leadership than those with a seniorities of 5 years or less and 21 years or more. In this study, the reason why administrators with seniority of 26 years or more had high scores on vision and faith may be because their self-confidence increased over time due to their faith and realization of the vision they created. As a matter of fact, it can be thought that as experience in working life increases, it becomes easier to create and share goals, and the more established goals are trusted and believed. School administrators may also have gained more experience over time.

The spiritual leadership levels of school administrators did not differ significantly in altruistic love and general spiritual leadership according to their managerial positions. However, the spiritual leadership levels of school administrators regarding vision and faith are higher than assistant administrators. A study in which the spiritual leadership level of school administrators was examined according to the variable of managerial duty was not found within the scope of the literature. However, in the study of Civgaz Kazancioglu (2018) examining the relationship between personality traits and leadership styles, it was found that the transformational leadership style differs according to the managerial position. In the study, it was determined that the average score of the administrators regarding transformational leadership style was higher than the assistant administrators. Transformational leadership, like the vision and faith dimensions of the leader, involves revealing a clear, attractive, and inspiring vision (Judge & Bono, 2000). Therefore, it can be said that the finding of Civgaz Kazancioglu (2018) supports the finding obtained in this research. The reason why school administrators score higher than assistant administrators in terms of vision and faith may be that assistant administrators do not participate sufficiently in the vision formation process. School administrators may not be able to set common goals that assistant administrators will faithfully embrace. As a matter of fact, Akbaba Altun (2003) revealed that the least important issue for school administrators is determining common goals.

It was determined that the extroversion personality trait of school administrators has positive and low-level relationships with altruistic love, vision and faith, and general spiritual leadership. It was revealed that the

relationship of agreeableness and openness personality traits with vision and faith, altruistic love and general spiritual leadership was positively low. Neuroticism has been found to have negative low-level relationships with vision and faith, altruistic love, and general spiritual leadership. It was found that the relationship of conscientiousness with altruistic love and general spiritual leadership was positively low; the relationship with vision and faith was positively medium. It can be said that there is a mostly low-level relationship between all personality traits and spiritual leadership. Similarly, in the research conducted by Judge et al. (2002), it was revealed that the relationship of leadership with agreeableness and conscientiousness was positively low; with neuroticism, it was negatively low; and with extroversion, it was positively medium. As can be seen, the findings of this study are also compatible with the study of Judge et al. (2002). Similar to this study, there are also studies (Civgaz Kazancioglu, 2018; De Hoogh et al., 2005; Judge and Bono, 2000; Yalcinkaya, 2017) showing that different leadership styles and personality traits are related.

It has been determined that the personality traits of school administrators affect their vision and faith, altruistic love and general spiritual leadership levels. 13% of the spiritual leadership of school administrators is related to their vision and faith; 12% of their spiritual leadership is related to altruistic love; and 14% of their general spiritual leadership can be explained by their personality traits. It can be said that the personality traits of school administrators predict their level of spiritual leadership. Within the scope of the literature reached, there is no study examining the effect of personality traits of school administrators on spiritual leadership. However, there are studies (Civgaz Kazancioglu, 2018; Yalcinkaya, 2017) showing that personality traits affect different leadership styles. Civgaz Kazancioglu (2018) revealed that the personality traits of school administrators affect their transformational, transactional and laissez-faire leadership styles. Yalcinkaya (2017) found that the personality traits of university students affected their transformational, transactional and laissez-faire leadership styles. Studies on leadership theories also show that personality is an important variable in defining leadership (Silverthorne, 2001). In the light of these results, it is important to consider personality traits in the selection of school administrators in terms of their leadership characteristics. In the current system, personality traits are not taken into account when choosing school administrators. However, it is necessary for the personality to be compatible with the work to be done for the well-being of organizations and individuals (Ozsoy & Yildiz, 2013). For example, it cannot be considered that an individual with a low conscientiousness personality trait can effectively fulfill roles that require high levels of responsibility, such as teaching leadership, change expertise, being a supervisor and community architecture (Balyer, 2012). As a matter of fact, studies in the literature suggest that effective leadership is consistently related to certain personality dimensions (Hogan, R., Curphy, & Hogan, J. 1994). Schools need effective leaders to function effectively and efficiently. Therefore, it can be said that the personalities of school administrators who will assume leadership roles in schools should be suitable for this task.

Regarding the results obtained, the following suggestions can be made. It was found that the spiritual leadership levels of school administrators were relatively high. This situation can be maintained. The participation of the assistant administrators in the process of creating the vision of the school can thus increase their faith in the vision. School principals can mentor vice principals. Trainings can be given to develop the vision-forming skills of assistant administrators and to increase their patience, endurance and perseverance. In addition, vision setting training can be given to school administrators with low seniority to increase their vision determination skills and their faith in the determined vision. In the study, differences were determined in the sub-dimensions of vision and faith according to seniority and management duties. The reason for these differences can be revealed by qualitative research. In this study, the spiritual leadership levels of school principals were determined according to their own evaluations. In future studies, the spiritual leadership levels of school administrators can be examined through the evaluations of teachers and school staff. Thus, it can be compared to see whether the school administrators' own spiritual leadership evaluations are compatible with the evaluations of school staff. In addition, conducting this study in a specific region is at limitation of the research. However, it can be said that there is a need to carry out studies that support the validity and reliability study and the spiritual leadership scale set out in this study.

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Author(s) Contribution Rate

The authors contributed equally to the article.

Conflicts of Interest

The authors declare that they have no conflict of interest.

Ethical Approval

Since the data of this research were collected before 2020, ethical approval was not obtained. However legal permission was obtained from the Ministry of National Education to conduct the study.

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