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From the Editor   13 December 2019

Dear IJCER Readers,

Welcome to Volume 6, Issue 2 of IJCER

IJCER attracted a great deal of academic interest from respected academics in the education field in 2019. That IJCER has been indexed with ERIC has played a major role in this. We are happy with this and we wish to be accepted by ESCI and applied for it. Yet, this has also affected the review and publication process of manuscripts negatively due to the influx of submissions. Therefore, we expect authors to understand that publication in a short time is not possible since we are strict about academic quality and publication frequency. IJCER will continue to be published biannually and each issue will include twenty articles.

In this issue, there are 20 articles from various fields of education. We hope that these articles will contribute to the literature. We would like to express our gratitude to our authors, reviewers and editorial board for their contribution to IJCER. We wish that our readers will find the issue of value to their field.

Hope to meet you in the next issue of the IJCER.

Regards,

Cahit ERDEM, PhD
Editor

The Role of Self-Esteem in Predicting Pedagogical Formation Students' Career Adaptabilities

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The Role of Self-Esteem in Predicting Pedagogical Formation Students' Career Adaptabilities[*]

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Abstract

The rapid changes in life standards and technology affect the social lives of individuals as well as world of work, job finding, work environments and career development. This rapid change also affects individuals' career adaptabilities, professional success and competences. Teaching profession is also affected by these changes. The aim of this study is to investigate the relationship between pedagogical formation students' career adaptability and self-esteem. A total of 235 volunteering pedagogical formation students who graduated from different faculties and received pedagogical formation education, including 190 females and 45 males, participated in this study. In order to collect data in the study, Personal Information Form (PIF), Career Adapt-Abilities Scale (CAAS) and Self-Liking/Self-Competence Scale (SLSC) were applied to the participants. The findings of the analyses show that there is a significant and positive relationship between career adaptabilities, self-liking and self-competence. Additionally, in the analysis conducted in order to test the predictability of the career adaptabilities by self-liking and self-competence, they were found to be significant predictors of the pedagogical formation students' career adaptabilities (R^2= .37, p < .01). The findings of the research revealed the need for career counseling once again.

Key words: Career adaptability, Self-esteem, Pedagogical formation education, Career counseling, Vocational guidance.

Introduction

As a result of the developments in the world, there are changes in world of work, job and career. Nowadays, the requirements of professions are changing rapidly, and this change becomes uncertain. This situation causes individuals to have more difficulties in their career transition (Cohen-Scali, Rossier & Nota, 2018). Individuals' career is not completed by getting a job because it is a life-long process. In addition, the career includes pre-occupational and post-occupational tasks as well as leisure activities and other roles undertaken in the society (Brown & Lent, 2013). The changes and consequences of globalization on the world of work life and employees are directly reflected in the career/vocational guidance and career counseling services. In modern societies, people are educated in schools before they are put into work life and they have a career in education (Cordoso & Sales, 2019), therefore, the vision of teachers about students also affects their career development. The teacher, who has such a responsibility, is a professional with different specialties. The most important effort for all nations in the time of rapid development and change is to train qualified individuals who are qualified to keep up with this process of change. Education and schools are the most effective tool in achieving this goal, and teachers are one of the important elements of this effective tool (Cohen-Scali, Rossier & Nota, 2018). In 2018 in Turkey, 440.311 pre-service teacher had applied to Student Selection and Placement Centre (ÖSYM) to become teachers in public institutions (ÖSYM, 2018). An important part of these pre-service teachers are students of pedagogical formation certificate program who have completed an undergraduate program other than faculties of education. As the pedagogical formation students do not take their undergraduate education in a field related to teaching, such as the faculty of education, the adequacy of pedagogical program is still being discussed (Bakaç & Özen, 2017; Çocuk, Yokuş & Tanrıseven, 2015; Kartal & Afacan, 2011; Kiraz & Kurul, 2018; Özcan & Genç, 2016; Süral & Sarıtaş, 2015). Teacher training in Turkey is one of the most controversial issues in the education system because of the failure to develop a coherent policy of teacher training. Different teacher

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education models were also tried in Turkey despite all the criticism. One of these models is pedagogical training program (Kiraz & Kurul, 2018; Uluyol & Şahin, 2018). Considering that around 20,000 new teachers start working in public schools every year, it may be argued that there is a need for the improvement of the career adaptabilities and competences of the rest.

It is known that individuals who take role models in career development are also effective (Garcia et al., 2019) and teachers are role models for their students. In this context, teachers' career adaptability functions in terms of both themselves and their students. The governments in Turkey have tried different teacher education policies since the proclamation of the Republic of Turkey and in 1993, teacher training institutions were organized within the faculties of education (Memduhoğlu & Kayan, 2017). This continuous change in teacher education policies has brought with it some difficulties such as instability, difficulties in adaption, and lack of professional identity development (Doğan & Çoban, 2009; Memduhoğlu & Kayan, 2017). In addition to all these problems in recent years, there is a significant difference between the number of the graduates from Faculties of Education and the number of teachers who are needed by Turkish Ministry of National Education (MEB). On the other hand, the number of pre-service teachers is increasing with the addition of students who receive pedagogical formation certificate to the students who graduated from faculties of education and this situation causes anxiety on pre-service teachers (Doğan & Çoban, 2009; Kiraz & Kurul, 2018). As pedagogical formation students do not graduate from a faculty of education like other pre-service teacher, their professional competence, occupational anxiety and career expectations are subjects of research (Balaman & Gelibolu, 2018; Süral & Sarıtaş, 2015). It is thought that the development of pedagogical formation students' career adaptabilities will help them to overcome this challenging process. A lot of studies during the past years have sought to explain components and predictors of career adaptability (Büyükgöze-Kavas, 2016; Neureiter & Traut-Mattausch, 2017; Rudolph, Lavigne & Zacher, 2017; Wilkins et al., 2018).

Nowadays, it is almost impossible to think about teaching and learning environments independently of technology so teaching profession requires different skills along with technological developments. Therefore, teachers' professional development both in Turkey (Dilmaç et al., 2009; Doğan & Çoban, 2009 Efilti & Çıkılı, 2017) as well as in the world (Afdal & Spernes, 2018; Lancaster & Bain, 2019) is seen as an important research area. Communication skills, career planning, decision making skills, career adaptability, resilience, life expectancy, economic situation, hope, education etc. affect the career development of individuals (Fasbender et al., 2019; Yeşilyaprak, 2012). Career adaptability, which has been increasingly emphasized by researchers in recent years, is seen as an important variable especially in the transition of individuals from academic life to work life and the success of future career movements (Garcia et al., 2019; Kanten, 2012; Rudolph, Lavigne & Zacher; Maree, 2012; Tak, 2012; Wilkins et al., 2018). Career adaptability can be defined as individuals' ability to cope with unexpected career changes, occupational transitions and potential barriers to work life (Savickas, 2013). Career adaptability is relevant today as it helps people to conform to the changes in the contemporary world of work and job-related roles. Career adaptability is considered as a basic structure that involves the attitudes, competencies and behaviors necessary for the young individuals to adapt to their jobs and changing work lives during the career development process (Savickas & Porfeli, 2012). According to the career construction theory, career adaptability has a four-dimensional structure: concern, control, curiosity, and confidence (Savickas, 2013; Savickas & Porfeli, 2012). Career concern is the individual's thought about future career and career options, making plans and adapting to his / her future. Career control is an individual's perceptions of himself / herself in decision-making and responsibility-taking skills in career development. Career curiosity, individual's interest, ability, value and personality characteristics in terms of recognizing himself and acquiring knowledge about the world of work as a result of testing the suitability between them. At last career confidence is an individual's beliefs in overcoming unexpected and sudden obstacles, difficulties and changes in career development (Savickas, 2013). In the research studies, it was found that, there was a positive relationship between pre-service teachers' career adaptability, career calling, career optimism and self-efficacy (Eryılmaz & Kara, 2018; McLennan, McIlveen & Perera, 2017). For this reason, this study is expected to contribute to counselors in career counseling studies as it is conducted to investigate pedagogical formation students' career adaptability and related variables.

The other variable of the study is self-esteem, which is seen as an important concept in the well-being of individuals, and it affects career development (Cohen-Scali, Rossier & Nota, 2018; Olenik-Smesh, Heiman & Keshet, 2018). Self is one of the main factors that affects the individual's emotions, thoughts, behavior and personality (Rosenberg, 1986; Snyder & Lopez, 2009) and self-esteem is a concept associated with self. Rosenberg (1986) states that self-esteem is related to the level of being satisfied with the perceptions of the individual. It is thought that self-esteem affects the daily lives of individuals in many ways (Brown & Lent, 2008). It is emphasized in the literature that self-esteem can be developed (Güler & Bedel, 2018; Orth, Erol & Luciano, 2018). Therefore, the explanation of the relationship between self-esteem and career adaptability will

pave the way for future studies. The aim of this study is to investigate the relationship between pedagogical formation students' career adaptability and self-esteem. In addition, satisfaction with program, satisfaction with undergraduate education and whether gender has an impact on career adaptability and self-esteem were investigated.

Method

The correlational design is employed in this quantitative study. Correlational design gives opportunity to researchers to explain the relationship among variables and predict scores (Creswell, 2012, p.338; Fraenkel, Wallen & Hyun, 2012, p.330). In this study, the relationships between pedagogical formation students' career adaptabilities, self-esteem and other variables gender, satisfaction etc. were investigated.

The Participants
The study group consists of pedagogical formation students who are studying pedagogical formation in a state university in Istanbul. A total of 235 volunteer pedagogical formation students' including 190 females and 45 males participated in this study. The age average of participants was 26.5. In addition, participants were asked about their satisfaction (Satisfied, Not sure, Dissatisfied) with the undergraduate education and undergraduate program and detailed information is presented in Table 1 below.

Table 1. Descriptive statistics of participants

Variables		N	Percentage (%)
Satisfaction with undergraduate education	Satisfied	98	41.7
	Not sure	67	28.5
	Dissatisfied	70	29.8
Satisfaction with undergraduate program	Satisfied	164	69.8
	Not sure	38	16.2
	No not satisfied	33	14
Gender	Female	190	80.8
	Male	45	19.2
Total		235	100

Instruments

In order to collect data, Personal Information Form (PIF), Turkish adaptation of the Career Adaptabilities Scale (CAAS) and Self-Liking/Self-Competence Scale (SLSC) were applied to the participants.

Personal Information Form (PIF)

In order to collect some demographic information about participants, a personal information form was developed by the researcher. In the PIF, questions such as age, gender, satisfaction from the university and profession etc. were included.

Career Adaptabilities Scale (CAAS)

In order to measure participants' career adaptabilities, Turkish adaptation of the Career Adapt-Abilities Scale (CAAS) which was developed by Savickas and Porfeli (2012) was used. Adaptation of the Turkish version of CAAS was done by Kanten (2012). Original form of the CAAS is a 5-point Likert-type scale consisting of 24 items and four sub-dimensions. In the adaptation of CAAS to Turkish, 5 items were excluded from the scale and a 19-item scale was obtained. The subscales of the scales were concern (3 items; $\alpha = .83$), control (5 items; $\alpha = .74$), curiosity (5 items; $\alpha = .79$) and confidence (6 items; $\alpha = .85$) (Kanten, 2012). The reliability coefficients of the CAAS was calculated again for this study and the results are presented in Table 2 below.

Self-Liking/Self-Competence Scale (SLSC)

Self-esteem, another variable of the study, was measured by the Self-Liking/Self-Competence Scale (SLSC), which was developed by Tafarodi and Swan (2001), and adapted to Turkish by Doğan (2011). SLSC is a 16-item, 5-point Likert-type measurement tool consisting of two sub-dimensions "*self-liking*" and "*self-competence*". Psychometric properties of SLSC were examined with confirmatory factor analysis (CFA) and criterion-related validity methods. The CFA result was confirmed in the original form of the scale as well as its two-factor structure. The Cronbach's alpha internal consistency coefficient was .83 for the self-liking subscale and .74 for the self-competence sub-dimension. Test-retest reliability coefficient was found as .72 for both sub-

dimensions (Doğan, 2011). The reliability coefficients of the CAAS and SLSC was calculated again for this study and the results are presented in Table 2.

Table 2. The Cronbach's alpha coefficient of the scales

Scale	Alpha(α)
CAAS-Total	.89
CAAS-Concern	.80
CAAS- Control	.75
CAAS-Curiosity	.85
CAAS- Confidence	.81
SLSC-Total	.90
SLSC-Self-liking	.88
SLSC-Self-competence	.81

The Cronbach's alpha coefficient for the reliability of instruments should be over .70 (Creswell, 2012; Fraenkel, Wallen and Hyun, 2012; Tabachnick & Fidell, 2013). In this context, it can be said that all data collection tools used within the scope of the research are reliable in terms of both the subscales and the whole scale.

Data Analysis

After the necessary permissions were obtained, data were collected in two different ways: face to face and online. Data collection tools (PIF, CAAS & SLSC) were applied by the researcher in the classroom environment to pedagogical formation students in an average of 20 minutes and online data were collected with the help of google forms. Before the research data were analyzed, the scales that the students completed were first transferred to the computer. During this transfer, scales belonging to 12 participants whose scales were incomplete and incorrectly filled were excluded from the data set. After the data was coded to the SPSS 21 program, the distribution characteristics of the data set were examined, and it was examined whether it was suitable for the stepwise multiple regression analysis which is a parametric analysis. As a result, the skewness and kurtosis coefficients of the data (max = .03 min = -.75) were between -1.5 and +1.5 in some references (Tabachnick and Fidell, 2013) and in some of them +2 with -2 (George & Mallory, 2016) and distributions were accepted as normal due to the normal distribution of variable errors in histogram and p-plot graphs. In addition, multiple linearity assumptions tested and Variance Inflation Factor (VIF) checked by examining VIF values. It was found that all values where there was no problem in the variance inflation factors were below 10 and there was no tolerance value close to 0.10 (Hair et al., 2013). Since the data shows normal distribution, the analysis of the data is based on parametric tests; t-test ANOVA, frequency, percentage, correlation and stepwise multiple regression analyzes were used.

Findings

In the analysis of the data, first of all, correlation analysis was conducted in order to test the relationship between career adaptabilities, self-esteem, and the sub-dimensions of these variables. The relationships between variables were examined by Pearson Product-Moment Correlation Analysis method and test results are presented in Table 3.

Table 3. Pearson correlation coefficients of variables

Variable	$\overline{X}$	Ss	r							
			1	2	3	4	5	6	7	8
1.CAAS-Total	77.88	9.07	-	.78*	.69*	.82*	.77*	.61*	.57*	.54*
2.CAAS-Concern	11.36	2.37			.45*	.55*	.50*	.42*	.46*	.27*
3.CAAS- Control	21.45	2.78				.37*	.36*	.50*	.54*	.35*
4.CAAS-Curiosity	19.27	3.66					.50*	.45*	.34*	.49*
5.CAAS- Confidence	25.79	2.93						.52*	.43*	.51*
6.SLSC-Total	56.60	10.10							.92*	.88*
7.SLSC-Self-liking	30.50	6.09								.64*
8.SLSC-Self-competence	25.09	5.04								-

*: $p < .01$

When Table 3 is examined, it is seen that there is a positive and significant relationship between the career adaptability score and the self-esteem scores of the participants ($r = .61$ p <.01). In addition, it was observed that there was a positive and significant relationship between the participants' career adaptability scores and self-liking scores ($r = .57$, p <.01) and self-competence scores ($r = .54$, p <.01) which were sub dimensions of the self-esteem.

In order to test whether self-liking and self-competence significantly predict career adaptability, a stepwise multiple regression analysis was performed. The results of stepwise multiple regression analyses are presented in Table 4.

Table 4. Results of stepwise multiple regression analysis

Dependent Variable	Model	Predictor Variables	B	SE_B	β	t	F	R	R^2	ΔR^2
Career Adaptability	1	Constant	51.90	2.49		20.82*	113.05*	.57	.33	.32
		Self-liking	.85	.08	.57	10.63*				
	2	Constant	46.43	2.67		17.37*	71.90*	.62	.38	.37
		Self-liking	.55	.10	.37	5.51*				
		Self-Competence	.56	.12	.31	4.38*				

*: p< .01

When Table 3 is examined, it was observed seen that in the first step of the stepwise multiple regression analysis, the self-liking scores of the participants explained 32% of the variance in the career adaptability [F: 113.05, R = .57, ΔR^2 = .32, p <.01]. In the second step of the analysis, the inclusion of self-competence score in the predictor variable group and the variance of the career adaptation scores to the predictor variables increased to 37% [F: 71.90, R = .62, ΔR^2 = .37, p <.01]. In other words, self-liking scores have a higher predictive effect than self-competence scores on career adaptability.

After stepwise regression analyses, it was tested with one-way ANOVA whether there was a significant difference between career adaptability and self-esteem scores of the participants according to satisfaction with undergraduate education and analysis results represented in Table 5.

Table 5. ANOVA results depending on satisfaction with undergraduate education

		N	$\bar{X}$	df	F	p	Difference (Tukey)
Career Adaptability	Satisfied (1)	98	80.28	2	9.72	.00**	1-2, 1-3, 2-3
	Not sure (2)	67	78.16	232			
	Dissatisfied (3)	70	72.25	234			
Self-Esteem	Satisfied (1)	98	59.58	2	10.38	.00**	1-3
	Not sure (2)	67	56.35	232			
	Dissatisfied (3)	70	52.65	234			

*: p< .05, **: p< .01

According to the results of one-way ANOVA analysis, pedagogical formation students' career adaptability scores differed significantly from the satisfaction with undergraduate education [F $_{(2-232)}$ = 9.72, p = .00 < .01]. After one-way ANOVA analysis, the Tukey test was used to determine the source of difference between groups. According to Tukey test results, it was found that there was a significant difference between the satisfied, not sure and dissatisfied groups in favor of the satisfied with undergraduate education group. Also, according to Tukey test difference between not sure and dissatisfied groups, there is a difference in favor of not sure. One-way ANOVA test was also used to determine whether pedagogical formation students' self-esteem scores differ according to satisfaction with undergraduate education and a statistically significant difference was found [F $_{(2-332)}$ = 10.38, p = .00 <.01] in favor of the satisfied with undergraduate education group. One-way ANOVA was applied again to test whether participants' career adaptability and self-esteem scores differ according to satisfaction with undergraduate program and the results are presented in Table 6.

Table 6. ANOVA Results depending on satisfaction with undergraduate program

		N	$\bar{X}$	df	F	p	Difference (Tukey)
Career Adaptability	Satisfied (1)	164	79.06	2	5.31	.00**	1-3
	Not sure (2)	38	76.18	232			
	Dissatisfied (3)	33	73.79	234			
Self-Esteem	Satisfied (1)	164	57.82	2	4.44	.02*	1-3
	Not sure (2)	38	54.63	232			
	Dissatisfied (3)	33	52.75	234			

*: p< .05, **: p< .01

According to the Table 6, pedagogical formation students' career adaptability scores differed significantly from the satisfaction with undergraduate program [F (2-232) = 5.31, p = .00 <.01]. After one-way ANOVA analysis the Tukey test was used to determine the source of difference between groups. According to Tukey test results, it was found that there was a significant difference between the satisfied and dissatisfied groups in favor of the satisfied with undergraduate program group. One-way ANOVA test was also used to determine whether pedagogical formation students' self-esteem scores differ according to satisfaction with undergraduate program and a statistically significant difference was found [F (2-332) = 4.44, p = .02 <.05] in favor of the satisfied with undergraduate program group. According to the gender, the participants' career adaptability and self-esteem scores were examined by t-test and no significant difference was found between the groups.

Results and Discussion

According to the findings of the study, self-esteem which has two dimensions "*self-liking*" and "*self-competence*" has a positive effect on pedagogical formation students' career adaptability. In recent years, studies on relationship between career adaptability and many different variables have been increasing rapidly in many countries, especially in western societies (Büyükgöze-Kavas, 2016; Cordoso & Sales, 2019; Duffy, 2010; Fasbender et al., 2019; Garcia et al., 2019; Karacan-Özdemir & Yerin-Güneri, 2017; Maree, 2012; McLennan, McIlveen & Perera, 2017; Wilkins et al., 2018). On the other hand, self, self-efficacy, self-esteem is a concept that is thought to be closely related to career and professional development (Bakaç & Özen, 2017; Duffy, 2010; Neureiter & Traut-Mattausch 2017; Rudolph, Lavigne & Zacher, 2017; Zacher, 2014). In addition, there are different studies investigating the relationship between self-efficacy and attitude towards teaching profession (Bakaç & Özen, 2017; Depaepe & König, 2018). Today, self and self-related concept is seen as an important variable in the well-being of individuals due to the effect of positive psychology (Snyder &Lopez, 2009). Pedagogical formation students are at the center of this study and vocational self-esteem is also considered as a key concept for the teaching profession (Depaepe & König, 2018; Dilmaç et al., 2009; Efilti & Çıkılı, 2017). Therefore, pedagogical formation students' self-esteem and their vocational self-esteem will affect their professional development (Efilti & Çıklı, 2017). According to the findings of the study, the high self-esteem of pedagogical formation students has a positive effect on career adaptability from this perspective, the findings of the study are consistent with the literature (Bakaç & Özen, 2017; Depaepe & König, 2018; McLennan, McIlveen & Perera, 2017). Since career adaptability is also developed through role model (Garcia et al., 2019) and teachers are also a role model for students, teachers' high career adaptability will benefit both themselves and their students.

When the career development is considered, self-esteem stands out as an important variable (Cohen-Scali, Rossier & Nota, 2018) because career management greatly consists of individual efforts and activities (Kanten, 2012). Additionally, rapid change in the world of work has made career adaptability a necessity to adapt to the work (Taber & Blankemeyer, 2015). Studies on career adaptability indicate that individuals with a high level of career adaptability are more competent in finding better job opportunities, making successful transitions in their jobs and achieving success in their jobs (Duffy, 2010; Fasbender et al., 2018; Garcia et al, 2019; Taber & Blankemeyer, 2015; Zacher, 2014). Nowadays, the requirements of a job are changing rapidly, and this change is becoming increasingly uncertain. This situation causes individuals to have more difficulties in their career transition. For this reason, in order to adapt young people to new situations and to survive the transition stages more comfortable and healthier, adaptability is of great importance. Recent research has shown that variables related *"self"* such as self-knowledge (Fasbender et al., 2019), self-efficacy (Karacan-Özdemir & Yerin-Güneri, 2017; Neureiter & Traut-Mattausch, 2017), self-esteem (Cai et al., 2015) and self-evaluation (Rudolph, Lavigne & Zacher, 2017) are closely related to career adaptability. With this study, it was seen that self-esteem was a significant predictor of career adaptability for Turkish pedagogical formation student sample. Similarly, McLennan, McIlveen & Perera (2017) states that there is a positive relationship between self-efficacy, career

adaptability and career optimism, also Bakaç & Özen (2017) states that there is a positive relationship between self-efficacy and attitudes towards teaching.

According to another finding of the study, it was found that the participants who were satisfied with undergraduate education had a significantly higher career adaptability and self-esteem score than not sure and dissatisfied group. Similarly, the relationship between academic satisfaction and profession satisfaction is explored in many parts of the world (Duffy, Douglass and Autin, 2015; Kanten, 2012). Another finding of the study shown that satisfaction with undergraduate program was also related to career adaptability and self-esteem. In other words, participants who are satisfied with undergraduate program and education have high career adaptability and high self-esteem scores. Career counselor and school counselor are required to help the students to know themselves and to help them settle in a program and university. In the meta-analysis research about self-esteem, Orth, Erol and Luciano (2018) have concluded that there is a very low or insignificant relationship between self-esteem and gender. Similarly, there was no significant relationship between gender and self-esteem in this study. On the other hand, Doğan (2011), who adapted the SLSC used in the study to Turkish, reached the conclusion that the gender was meaningless in the self-liking dimension of the scale and that there was a difference in favor of men in the self-competence dimension. In the study, it was found that gender is not a significant variable when it is investigated whether gender causes a difference on career adaptability. Similarly, Erus & Zeren (2017) were found no significant difference between pedagogical formation students' career adaptability by gender. Career adaptability is closely related to variables such as resilience, optimism, future perspective, adaptation, hope and proactive personality, which are the basic concepts of positive psychology (Büyükgöze-Kavas, 2016; Fasbender et al., 2019; Karacan-Özdemir & Yerin-Güneri, 2017; Rudolph, Lavigne & Zacher). In this study, it is emphasized that the self and perceptions about self-esteem have an effect on the future of the career. The recommendation part of the study was based on these findings and suggestions were given to the researchers.

Conclusion and Recommendations

According to the findings of the study, Self-esteem is a significant predictor of pedagogical formation students' career adaptability and has a positive effect on it. In the literature, it is stated that self-esteem is a characteristic that can be developed and psycho-education programs to develop self-esteem should be implemented from an early age (Güler & Bedel, 2018; Orth, Erol & Luciano, 2018). In addition, research studies that emphasize that career adaptability can be trained are also reported in the literature (Koen, Klehe, Vianen, 2012). In this context, the importance of career counseling and vocational guidance studies to be carried out by the school Psychological Counseling and Guidance (PCG) services has been seen once again. It is possible to focus on psycho-education studies aiming to develop individuals with high self-esteem under the leadership of school counselors (Brown & Lent, 2013). Firstly, in Turkey, it is necessary to reconsider the national education policy objectives for PCG, vocational guidance career counseling. The policies and systems in this area should be in a structure that considers the paradigm shift, overlapping with the information society economy and country needs (Yeşilyaprak, 2012). According to another finding of the study, it is concluded that pedagogical formation students who have positive self-liking and self-competence perception have higher career adaptability. This result indicates that school PCG services should start from the pre-school period, especially in secondary education, in order to work on vocational guidance which is carried out in order to get people to know themselves and to guide them to the most suitable career. As one of the important findings of the study, the pedagogical formation students who were satisfied with the education received had higher career adaptability and self-esteem scores than those who were not satisfied. Çocuk, Yokuş & Tanrıseven (2015) states that the perceptions of pedagogical formation students about the teaching profession are positive and the perceptions about the pedagogical formation certificate program are negative. Similarly, in the study conducted by Süral & Sarıtaş (2015), 73% of the pedagogical formation students did not get enough of the 2-term education and they stated that pedagogical formation education should be extended to 4-year period just like the education faculties. Based on these findings teacher education policies in Turkey should be reconsidered. In other words, it would be meaningless to expect pre-service teachers who do not think they have received adequate training when they begin their profession.

Although this research has important contributions to literature it has some limitations. Firstly, the data obtained from the research are quantitative afterwards, a more comprehensive result can be obtained by using a combination of quantitative and qualitative designs together. In the Turkish version of CAAS, 5 items were removed during the adaptation process (Kanten, 2012). This can be seen as a limitation of the measured career adaptability. Therefore, in the future studies, a new measurement tool can be developed to measure career adaptability on the Turkish sample. This research is a correlational study, and researchers who will work on this subject may use an experimental design and experimentally test the effect of self-esteem on career adaptation. In

addition, the sample of this study consists of pedagogical formation students who have not stepped into the world of work so future research may focus on different groups of participants, such as individuals already teaching in schools.

Acknowledgements or Notes

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Representation of Algebraic Reasoning in Sets through Argumentation

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Abstract

The purpose of the current study is to examine the ways in which preservice middle school mathematics teachers (PMSMT) apply and represent algebraic reasoning in their solution processes for the problems in the concept of sets. This model provides detailed information about the reasoning made through the process of the solution of set problems. The study group of this case study was composed of 20 preservice mathematics teachers. The data were collected through written documents and whole class discussions. Based on the findings of the study, three ways to represent algebraic reasoning in sets emerged; context-based representation of algebraic reasoning, generalization-based representation of algebraic reasoning and formulization-based representation of algebraic reasoning. These ways determined based on the argumentations that they formed. They produced different warrants since they reasoned differently.

Key words: Algebraic reasoning, Argumentation, Representation of algebraic reasoning, Sets.

Introduction

When the mathematical concepts taught to different grade level of students are considered, they necessitate to improve algebraic reasoning. Improving students' algebraic reasoning is one of the most important responsibilities of mathematics teachers (Kaput, 1999; Schifter, 1999). These teachers are expected to have sufficient experience with rich and relational aspects of algebraic reasoning to perform their teaching in their classrooms. Hence, it is important that the teachers equipped with necessary knowledge and skills are to be educated in their preservice years to design their mathematics lessons particularly teaching concepts about algebra effectively. Through preservice years, teacher candidates are provided opportunities to acquire necessary knowledge and skills about content in order to perform teaching effectively when they become teachers in the future (Chapman, 2007; NCTM, 2006). In this respect, it is important to analyze preservice middle school mathematics teachers' (PMSMT) algebraic reasoning and the ways and representations on the concepts in detail and different perspectives. In the current study, it was paid attention on the knowledge, ways and representations used for making inferences about the PMSMT's algebraic reasoning. More specifically, the present study focused on how the PMSMT represent their algebraic reasoning on a particular mathematical concept of sets. The process was delimited on the sets because of various aspects of algebraic reasoning. In other words, algebraic reasoning is composed of various types of thought and comprehension of symbolism such as generalization by arithmetic and patterns, symbolism, understanding the structure of number system and patterns, and mathematical modelling (Kaput, 1999).

The preservice middle school mathematics teachers (PMSMT) are expected to design mathematics lessons providing opportunities for students to attain necessary knowledge and skills (Chapman, 2007; NCTM, 2006) particularly algebraic reasoning when they become inservice teachers (Blanton & Kaput, 2005). With this motivation, they need to have necessary knowledge about algebra concepts and skills as algebraic reasoning. This case should be explored in the particular concepts in detail so the mathematical concept of set has been chosen for the current study. When the nature of sets and types of thought about algebraic reasoning, and comprehension of symbolism as explained above by Kaput (1999) are considered, it can be stated the mathematical concept of sets providing a beneficial way to support the unity in mathematics language (Donmez, 2002) are appropriate to extract algebraic reasoning. The PMSMT need to understand and use generalization, symbolism and structure of number systems related to algebraic reasoning through understanding sets making

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operations on sets. When the sets in mathematics is thought, it can be claimed that the algebraic reasoning takes an important place. Even, the sets are taught enhancing algebraic reasoning at the necessary level. The primary school students are provided opportunities to engage in the sets with defined elements. Then, they are expected to grasp the connection between different sets to form the union or intersection of them. After that, they make a generalization about the intersection and union of sets. When necessities for the concept of the sets in higher grade levels are examined, the importance of algebraic reasoning increases. It can be explained that the algebra of sets is algebra of numbers illustrated with the help of the set-theoretic analogue. For example, sets suggests a way for the algebra of the set-theoretic operations of union, intersection and complementation, equality and inclusion (Courant, Robbins, & Stewart, 1996). In this respect, it is important to examine the algebraic reasoning in the mathematical concept of sets. This examination can be effectively made through the course that they learn sets and attain the ability of reasoning algebraically in sets. With this motivation, the present study was organized based on the purpose of identifying the PMSMT's representations of algebraic reasoning about the concept of sets.

This process could be examined through their ideas and argumentations effectively since the algebraic reasoning has been important to understand the concept. Studies in this field (Uygun & Akyuz, 2019; Conner et al., 2014; Krummheuer, 1995; Toulmin 1958/2003; Yackel, 2002) have showed that argumentation can be effectively used to analyze and comprehend mathematical aspects of social events in classrooms. Particularly, argumentation has facilitated the identification of kinds of mathematical reasoning focusing on their elements and distinctions among them in classroom conversations (Conner et al., 2014). Based on these perspectives, the ways of representation of algebraic reasoning and differences between them may be identified. Moreover, the reasons behind these differences may be determined so that mathematics educators may help preservice teachers to develop their reasoning and understanding about the concepts. Also, preservice teachers may make decisions about their profession related to algebraic reasoning being aware of different ways of reasoning about a particular concept. In this article, it was aimed to demonstrate that how argumentation could provide insight and enhance the representation of algebraic reasoning in different ways about the particular mathematical concept of sets. In this respect, the purpose of the present study was to examine the ways of how PMSMT represent their algebraic reasoning in a particular concept of sets through their argumentations. Hence, the answer of the question of "How was algebraic reasoning represented through solving problems and mathematical ideas used in the context of sets by the PMSMT?" was examined in the current study.

Theoretical Framework

Algebraic reasoning

The algebra has connection with many concepts such as sets, number, place value, basic facts and computation, operation concepts, proportional reasoning, measurement, geometry and data analysis (Kaput, 1998/1999). Moreover, it is important in expressions with symbols and making the extensions in numbers beyond the whole numbers in order to analyze the equations and functional relations, and determining the structure of the representational system including mathematical expressions and their connections. Furthermore, algebraic reasoning includes more actions than knowing the facts and techniques on sets. It is a way of thinking. Kaput (1999) emphasizes this view by explaining five kinds of thoughts and use symbolism including comprehension of symbolism such as generalization by arithmetic and patterns, symbolism, understanding the structure of number system and patterns, and mathematical modelling. This thinking as algebraic reasoning includes two central themes; making generalizations and using symbols to represent mathematical ideas and to represent and solve problems (Lew, 2004). Algebraic reasoning is defined as the ability to pay attention the quantities changing in the contexts and describe the ways in which they are connected. It also includes describing the change and the rate of this change benefiting from the tables, graphs, symbols, mathematical expressions, by thinking across and focusing on the relationship among those representations for particular contexts. Moreover, it necessitates to analyze and understand the algebraic expressions represented in multiple ways by considering their connections with the contexts that they formed and expressed (Carraher & Schliemann, 2007). Because of the role of these actions of algebraic reasoning in learning and understanding mathematics, it is important to develop algebraic reasoning. Students attain algebraic reasoning by connecting the concepts, realizing the relations and making generalizations. Moreover, it can be explained that if students reason algebraically, they can understand mathematical concepts such as patterns, and functions; represent and analyze mathematical situations using mathematical symbols; benefit from modelling to illustrate the change on the variables defined in the contexts (Kaput & Blanton, 2005; Van de Walle, Karp, & Bay-Williams, 2011).

Argumentation in Mathematics Education

The present study is organized based on the relationship between argumentation and reasoning. In many contexts, argumentation is described as "trains of reasoning" (Toulmin, Rieke & Janik, 1984, p.12). Also, Conner, Singletary, Smith, Wegner and Franncisco (2014) explain that creating an argument and reasoning are performed together enhancing the occurrence of each other. Moreover, they are examined and expressed through similar processes in mathematics (Conner et al., 2014). Argumentation can be expressed as a kind of discourse formed through justification, association and use of ideas (Ibraim & Justi, 2016). It can also be explained as the conviction mechanism used in a conflicted environment; a social and intellectual process involving verbal activities aimed at supporting or refuting an idea; a learning environment activity in which ideas that support conceptual meaning are structured (Binkley, 1995; Duschl & Osborne, 2002; Ohlsson, 1995; Siegel, 1995; Van Eemeren, 1995). It is the process of supporting and defending an idea. When it comes to mathematics, argumentation focuses on how mathematical ideas of individuals and why they are supported are related to one another and how they are used in discussions or in communication (Pedemonte, 2007).

Through algebraic reasoning, it is important to justify mathematical expressions since students focus on the reasons about concepts. In this respect, argumentations can be useful to be linked with algebraic reasoning. Argumentation encourages the development and formation of mathematical justifications in a social learning environment in which the students share and criticize others' ideas and explanations (Uygun & Akyuz, 2019; Yackel & Cobb, 1996). In this respect, the students reason the ideas so that they can understand and learn the concepts through argumentations (Lampert, 1990). Through argumentations, students do not apply the rules and theorems to the contexts by memorizing (Uygun & Akyuz, 2019; Pedemonte, 2007). Instead of this case, they explain how and why they apply them in the problem situations. Therefore, the argumentations are useful to develop reasoning and also algebraic reasoning. Moreover, argumentations enhance conceptual change, understanding of the concepts and solution of the problems for the students in social learning environment (Abi-El-Mona & Abd-El-Khalick, 2011; Jonassen & Kim, 2010). Moreover, classroom discussions can be useful to encourage students' development of algebraic reasoning (Kızıltoprak, & Yavuzsoy-Köse, 2017). In that respect, argumentation as a kind of mathematical discourse formed through classroom discussions can help preservice teachers improve their algebraic reasoning.

Method

The present study was organized based on case study research design due to its help of understanding processes involved in the study thoroughly (Merriam, 1998). Case study is useful to examine a phenomenon in detail in its real life context and holistic perspective (Creswell, 2012). Different students' responses on a particular issue such as sets were examined as case for the current study. In this respect, preservice middle school mathematics teachers' representation of algebraic reasoning was examined and reported based on its meaningful characteristics.

Participants

Purposive sampling strategy was used in order to select the participants. The judgment about determining the participants for the present study was being enrolled in the undergraduate course of "General Mathematics" since they are taught sets in this course. Then, 20 preservice mathematics teachers who were freshmen and enrolled in this course, were selected as participants for the present study. Also, they were the candidates of secondary school teachers. Of these PMSMT participating in the study, 12 of them were male and 8 were female. All of them were asked some open-ended problems related to sets and operations on sets such as union and intersection and needing algebraic thinking. Then, they discussed about what they did to solve them and how they reasoned.

Data Collection

Three-week instructional sequence and two hours in each week were conducted to the PMSMT. This sequence were designed about the concept of sets. In this sequence, the PMSMT engaged in activities and problems formed by literature review and textbooks about sets. The textbooks about sets and the problems about them were examined and mostly used operations and examples were determined. Then, considering these determined problems, three tests including almost five open-ended questions about sets and operations on them to be used in

each week were prepared by the researchers. Moreover, these problems (see Appendix) were determined by considering that they should encourage reasoning about them, making explanations by generalizing, understanding symbolism considering five types of thought explained by Kaput (1999). The problems on the tests were examined by an academician having doctorate degree in mathematics and two PMSMT not participating in the study. By their views about the problems, the tests were revised and re-designed to be used through three-week instructional sequence. Then, each of the tests were conducted to the participants of the study respectively based on order of concept and operations of sets. The data were collected through written documents and whole class discussions. Initially, they were asked to solve problems on tests by justifying the correctness of set expressions explained in the problems. While they were solving these problems and after the solution process had been completed, they participated in whole class discussion. In this discussion process, the instructor observed the studies of the PMSMT and then, initiated the discussions focusing on different ways, missing and incorrect parts of the solutions. They talked about what they did and why they did so on their written documents. Also, the data collected through written documents were firstly examined through observing the PMSMT while they were studying about the problems on the tests. The ideas determined and not understood were asked and criticized through discussions. Whole class discussion process was recorded by two video cameras; one camera for in front of the classroom and one for back of the classroom. In order to collect detailed data about the events and discussion happened in the instructional sequence and to make correct inferences, two video cameras were used. Through instruction, the instructor was not able to observe all of the participants effectively at the same time. Hence, by video recordings, the roles and actions of all of the participants were recorded by video cameras so that the analysis could be performed effectively. The participants were aware of and aim of usage video cameras in the classrooms. Also, in order to remove the effect of video camera on the PMSMT for the current study, the video cameras were placed and used in the classroom two weeks before data collection process. After the discussions were completed, they were transcribed verbatim.

Data analysis

In classroom conversations, the PMSMT'S ideas and argumentations represent their reasoning about their understanding and algebraic reasoning. The signs used in this process to explain their ideas are considered in a broad sense, including written or linguistic terms, gestures (Arzarello 2006; Ernest 2008; Radford 2002). Moreover, they are considered as constitutive parts of reasoning. With the help of the ways followed by the students and the interpretations of them for the students, the ways of representation and use of algebraic reasoning can be understood beneficially. The video recordings were transcribed and coded. The instructor's explanations were illustrated by the letter of R and the PMSMT's explanations were done using S where n showed different positive natural numbers representing different PMSMTs. The data analysis process also included two parts; document and whole class discussion analysis. In the process of qualitative data analysis, Toulmin's model of argumentation was used. The core of this model is composed of three elements; the data, claim and warrant. In the model, the learners may provide encouraging explanations for the warrant and argument in the form of backing, rebuttals and qualifiers. The element of claim is related to conclusion statement of the argumentation. The data refers to the evidence and warrant as the way linking the data with the proposed conclusion. Also, backing supports the warrant itself (Stephan et al., 2003). Initially, the components of Toulmin's (1958/2003) model were identified in the transcribed whole class discussions. Then, the core elements of model were used in order to determine the codes and themes. The codes for the core elements of the model are content, goal of formation, condition and characteristic. The themes formed by the Toulmin's model and the codes were organized as context-based representation of algebraic reasoning, generalization-based representation of algebraic reasoning and formulization-based representation of algebraic reasoning. The transcripts were analyzed in order to determine argumentation logs representing the mathematical ideas including argumentation elements such as claim, data, and warrant. Each argumentation log for a mathematical idea was identified as code. Related codes were explained by themes as in Table 1. Moreover, the trustworthiness was supported by the investigator triangulation performed by two researchers of the study. The researchers analyzed the data independently and then compared their analysis. They made comparisons among the codes and themes that they determined independently. Then, they formed a list of code and themes. The similar codes and themes were placed to the list. They discussed about the different codes and themes until they reached consensus. Through discussion, they formed common codes and themes for different ones. Their agreement about the codes and elements of Toulmin' model of argumentation by the data was determined approximately 85%. At the end of the analysis, a different researcher who was academician with sufficient knowledge about algebra read and assessed the analysis part of the study considering the properties of consistency and coherence. By doing investigator triangulation and peer debriefing, the trustworthiness of the present study was satisfied successfully (Lincoln & Guba, 1985).

Table 1. *Codes and themes*

Codes	Themes
Not considering generalization	Context-based representation of
Using limited symbolism or symbols for representation	algebraic reasoning
Focusing on particular context rather than structure of operations	
Considering limited generalization	Generalization-based
Using explanations rather than symbolism	representation of algebraic
Focusing on meaning of structure of operations	reasoning
Considering generalization	Formulization-based
Using symbolism effectively	representation of algebraic
Focusing on structure of operations by mathematical language	reasoning

Findings

Representation Ways of Algebraic Reasoning in Sets

When the process of the PMSMT's engaging in set expressions were examined based on argumentation framework, the ways of representation of algebraic reasoning in sets made by PMSMT were separated into three groups. Hence, three types of representation of algebraic reasoning were evolved through the argumentations.

Context-based Representation of Algebraic Reasoning

In this way of reasoning, the PMSMT focused on representation of the expression so they formed Venn diagrams and shaded regions given in the set expressions. Usually, the PMSMT started by drawing representations and forming specific contexts. As illustrated in Figure 1 and Figure 2, they drew Venn-diagrams by coloring the parts explained right and left parts in the equation. Figure 1 represented left-hand side of the set expression and Figure 2 did the right-hand side of the expression. The PMSMT using this way of representation performed similar actions in other questions.
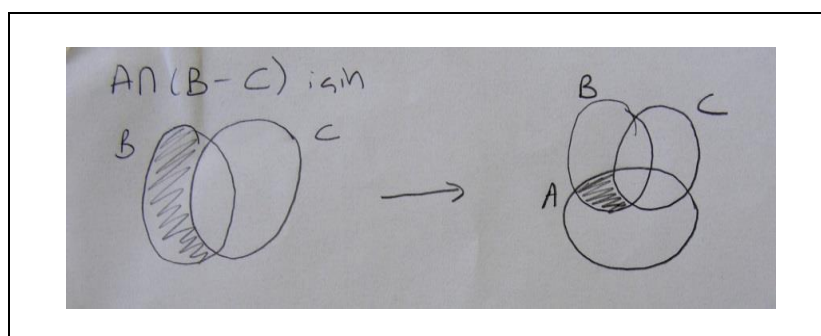
Figure 1. The representation of $A \cap (B - C)$ of the S_1
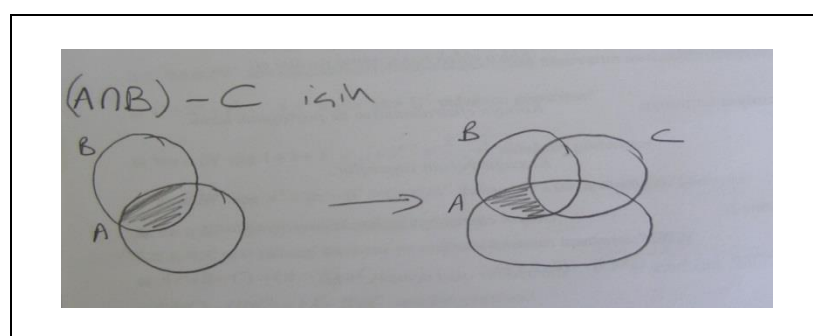
Figure 2. The representation of $(A \cap B) - C$ of the S_1

The PMSMT represented the set expressions explained in the equation. In that solution process, initially, the PMSMT made reasoning by shading on diagrams such as Venn-diagrams. Also, they explained that they used the shapes to understand and to describe the problem clearly and to compare the formed shapes. Some part of the argumentation happened as follows:

R: Why did you draw the Venn-diagram?
S_1: Since, I wanted to see which regions belonged to $A \cap (B–C)$ and $(A \cap B)–C$ in Venn-diagram. I determined their regions based on the operations. Intersection set is formed by common elements so…[*DATA*]
R: Why did you want to see their regions?
S_1: By seeing their regions, I realized that they represented the same parts in the diagram. So, I was sure that the statement was true. [*CLAIM*]
R: What is the benefit of becoming sure about the equation by using the diagram?
S_1: I make this since when I become sure about the truth of explanation, I knew that I can continue to plan the solution.
R: What was your plan for this question?
S_1: While representing the different sides of the equation, I followed different steps but attained the same part in the diagram. For example, while representing left-hand side of the equation, I determined the place of $(B – C)$ first and then, the place of the intersection of the set of A and the set of I determined in the previous step. Moreover, while solving the other side of equation, in the first step, I determined the place of $(A \cap B)$ and then I found the place of the difference of set that I determined in the first step and the set of C. I understood that I could solve the question by following similar steps. [*WARRANT*]
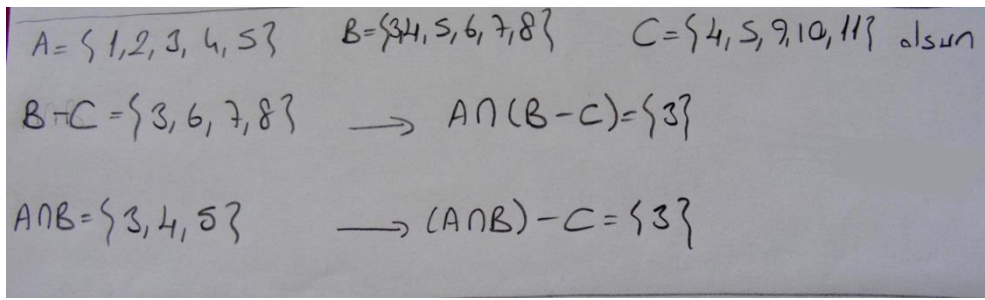
As understood from this episode of the argumentation, S_1 claimed the truth of the expression and she needed to see the representation of the set expression to understand the problem. For this claim, she used the Venn-diagrams and the definitions of the operations in its written form for the data of the argument. In other words, she used the expressions of the definitions of the operations but not mathematically. For example, intersection of two sets was composed of the common elements of these sets. Then, she made comparison between right and left-hand sides of the equation. By making these representations, she obtained information about the steps to follow in order for solving the questions as the warrant of the argument. In this solution process, the students solved the question by explaining and representing that both hand-sides of the equation were same. In order to help PMSMT represent set expressions by using standard symbolic form, they were asked to make further mathematical explanation. Then, they focused on the contexts and formed the particular sets to justify the truth of set expressions.

As illustrated in Figure 3, some PMSMT formed specific sets with particular elements and then they solved the problem by using roter notation. In that solution process, they used symbols (-, A, B, C, $\cap$, 1, 2, 3, etc.) and some of these symbols such as numbers selected randomly by them. They tried to understand and describe the expression by using roter notation and specifying the explanation into a specific context. At the end, they made comparison of the attained sets for both hand-sides of the set expression. Also, argumentation was produced by focusing on the solution of one of them for these activities as follows:

Figure 3. Representation of set formed by S_4

R: What did you do in this part?
S_4: There are three sets as A, B and C in the equation. I assigned the elements to these sets.
R: Why did you do so?

S$_4$: Since, I wanted to see a clear example to understand it. At first glance, I could not clearly understand what the equation means.

R: What did you do after assigning the elements to the sets?

S$_4$: After forming the sets with elements, I made the operations represented as A∩(B–C) and (A∩B)–C [WARRANT]. Then, I attained the same sets. By following different steps with the same sets, I attained the same sets. I understood that A∩(B–C) and (A∩B)–C represented the same sets. The equation is correct [CLAIM].

As understood from the dialogue that the Student 4 assigned randomly selected elements for the sets. He formed particular A, B and C sets. He used these sets and the definitions of operations on set expressions in the equation as data for his argument. Then, they represented the expression by using elements of these sets. He understood the problem and solved it in this way. He represented his reasoning based on a specific context. Also, he made comparison between right and left-hand sides of the equation. Hence, by making comparison through following the operations on these sets, he proposed the warrant of his argument. By forming these sets, they obtained information about different written forms of the specific set. He became aware of that he needed to prove that the different sides of the equation are different written forms of the set. Hence, he produced the claim that the equation or mathematical expression is correct.

When the arguments were examined, the PMSMT produced their claims benefiting from the data and warrant supported by shading regions or particular sets and the expressions of the operations. As it was understood from these episodes of the argumentations, the PMSMT tried to understand the questions and to make reasoning by forming specific examples. They formed contexts for set expressions and made set operations based on these contexts. Hence, this way was named as context-based representation of algebraic reasoning. Moreover, when the documents and arguments were clearly examined, it could be said that the PMSMT dealt with the procedures and tried to increase their procedural knowledge by using context-based question formed by them. In both cases, the PMSMT were asked to justify the equality of both hand-sides of the equation but they tried to show this equality based on operations without proving. Moreover, instead of considering the sets as arbitrary sets including unknown elements, they formed the sets with limited elements based on their thoughts or the regions covered on the diagrams by focusing on operational conception in the expression by producing contexts.

Despite its apparently concrete nature based on representations and contexts, context-based representation of algebraic reasoning does not mean reflecting mathematical thinking in a simple way. As it was shown on the figures above and formed arguments, this type of representation for algebraic reasoning comes up to perception becoming evolved mechanism at high level and rhythmic coordination of words, representations, formation of contexts and symbols. In this process, it was observed that the PMSMT had the understanding of structural features of sets and set expressions. Also, they focused on graphical and symbolic representation forms about sets and set operations but they could not successfully use them. Because, they could not accurately consider about generalization and standard representation form of the set expression.

Generalization-based Representation of Algebraic Reasoning

In this way of representation of algebraic reasoning, the PMSMT benefited from the systems of mathematics and language. The students used the symbols only in the mathematical definitions of the operations of sets. The PMSMT used their understanding of set theoretic operations and then they made trials to transfer this context-based representation of algebraic understanding to standard algebraic understanding. They used the formal definitions of operations on sets in this way of representation of algebraic reasoning. However, they could not successfully transfer and use these definitions in the operations asked in the problem.

In this way, they benefited from general definitions of operations of sets in the transition process as illustrated in Figure 4. In the problem, there existed intersection and difference operations of sets. S$_7$ produced formal definitions of these operations. Using her expressions and mathematical representations, she considered about generalization aspect of the set expressions in the problems by the structures of set operation. Hence, she used this understanding and produced her solutions to form standard expression. However, she could not appropriately use related symbols and notations in her solutions. These activities were also asked to the students. There was a typical argumentation for the claim about the truth of equation related to set expression as follows:

R: What did you do in this part of your solution?

S$_7$: I used the definitions of set union and set difference written in the problem [*DATA*] in order to show the truth of the equation [*CLAIM*].

R: Why did you use the letter of X here?

S[7]: I need to prove the statement for arbitrary sets. I use the letter of x for any element in the set. I mean by using this letter that x is an arbitrary element in the set so that the operations become valid for all elements in the set. Also, as I remembered from the lesson, if an object belongs to a set, it is said to be an element of the set. For example, if x is an element of set A, we write x∈A, and if x is not an element of A we write x∉A. The notations are important in doing mathematics since by using right notations, we can do mathematics. [*WARRANT*]

We can show an arbitrary element of a set as x∈A for. We can show non-elements of the set as x∉A. A∩B set shows the common elements of the sets of A and B.
A∩B = {x: x∈A ve x∈B}
The set of A-B shows the elements in the set of A and they are not also the elements of the set of B. A-B = {x: x∈A ve x∉B}
Now, it is important to think in general perspective. Hence, I need to write an arbitrary element instead of a particular element.

Figure 4. Written form of warrant explained by S[7]

R: Why did you use the definitions of operations?

S[7]: Actually, I did not comprehend how to prove the equation formally. Hence, I wrote the formal definitions of related operations. Then, I tried to prove the statement by using notations in formal way.

As understood from the documents and the discussions, in this way of representation of solution process, the PMSMT had structural knowledge about sets and they were aware of the case of generalization in set expressions. However, they could not use standard formal way of algebraic reasoning about sets. Hence, they focused on verbal explanations about solution of set expression for this argument. In this process, the PMSMT using this way engaged in the mathematical definitions of the operations in the equation and made some formal manipulations on the formulas and procedures. They examined them and then, they tried to represent the expression in standard algebraic form.

Formulization-based Representation of Algebraic Reasoning

Justifying the expression by using the algebraic standard symbolism might be much more difficult than expressing it in words whatever their grades are. This way of representing algebraic reasoning in sets could be achieved by the PMSMT by putting much effort on it. In this way of the representation of algebraic reasoning in solution process, it was observed that the PMSMT had structural knowledge about sets and set operations. Also, they could appropriately use standard symbolic forms about set expression. They used formal right algebraic symbols (x, A, B, C, -, ∩) by understanding their meanings and roles as illustrated in Figure 5.

Figure 5. Solution of S_{16}

As seen from Figure 5, they could effectively justify set expression by using standard algebraic notation by explaining the claim about the truth of the mathematical expression in the problem. In order to clearly examine the way of representing their algebraic reasoning, their argumentations were examined. Some episode of this argumentation is as follows:

> R: What did you do in this part of your solution?
>
> S_{16}: Initially, I need to show that I proved that two sets on different sides of equation are equal sets [*CLAIM*] by demonstrating that they are subsets of each other. In this case, I showed both $A \cap (B–C) \subseteq (A \cap B)–C$ and $(A \cap B)–C \subseteq A \cap (B–C)$. Then, I chose x as an arbitrary element in the set and wrote $x \in A \cap (B–C)$ [*DATA*]. Afterwards, I examined the possibilities about the existence of x in the sets of A, B and C. When I considered the property of the set intersection and set difference, x is the element of the sets of A and B but it is not the element of set C. Then, I continued to prove the equation. At the end, I found that both sides of the equation were same so that I proved it. [*WARRANT*]

In this argument, S_{16} provided data by the definitions and properties of intersection, difference and subsets. Then, operational process and transfer of these properties were explained as the warrant of the argument. In the warrant, they thought in general perspective about set expression. They grasped the important point of algebraic reasoning by using x as an arbitrarily chosen element in a set and used it through the process. Without having any oppositions in the context, they began to use a new version of algebraic reasoning and progressed through the emergence of algebraic reasoning representing a deep region for algebraic reasoning. They progressed from a referential comprehension of signs (signs used to illustrate significant elements in sets). The participants could effectively justify the set expression by using the algebraic reasoning with formal notations. In this way, the PMSMT focused on representation of justifying the expression by using standard signs with mathematical expressions accurately. Hence, this way of representation of algebraic reasoning can be named as formulization-based representation of algebraic reasoning.

Transition between the Ways of Representation of Algebraic Reasoning in Sets

In the first way of representation of algebraic reasoning, the PMSMT tried to think about set expressions by using specific examples and representations or shading regions on diagrams. This way was named as context-based representation of algebraic reasoning since they made trials to justify the set expression by using contexts. In the second way, they tried to make actions to justify set expression. This justification process was not about a specific context or real life examples. They focused on generalization using structural knowledge about sets and set operations. However, they made verbal statements instead of using standard related symbols. So, this way was named as generalization-based algebraic reasoning. They thought about the general definitions and properties of the sets and operations and made actions to transfer structural knowledge to standard symbolic form. At the last way, they made actions to justify expressions by using standard algebraic and formal symbols. Hence, this last one was named as formulization-based algebraic reasoning.

Through the three-week instructional sequence, PMSMT engaged in the problems individually and then participated in whole class discussions. Through these discussions they examined their solutions and reasoning under the guidance of the instructor. Through argumentations, the PMSMT shared, analyzed and understood others' ways of representation of algebraic reasoning in sets. In this process, they realized the missing parts of their representation ways and usage of algebraic reasoning, and then made effort to form correct justification by

understanding and using others' ways of representation of algebraic reasoning. Also, they improved their way of representation of algebraic reasoning in sets and made transitions between three ways emerged in the study. When the PMSMT's justification processes made in different set expressions in which they engaged in three weeks were examined, it was observed 5 of PMSMT represented two ways of representation of algebraic reasoning and 2 of them showed all ways in their processes. Moreover, 13 of PMSMT illustrated one of these ways of representation of algebraic reasoning as illustrated in Table 2.

Table 2. Number of PMSMT using different ways of representation of algebraic reasoning

Ways of Representation of Algebraic Reasoning	1	2	3	$1 \rightarrow 2$	$2 \rightarrow 3$	$1 \rightarrow 2 \rightarrow 3$
Number of PMSMT	2	4	7	2	3	2

1: Context-based representation of algebraic reasoning
2: Generalization-based representation of algebraic thinking
3: Formulization-based representation of algebraic thinking
1→2: Moving from context-based to generalization-based representation of algebraic reasoning
2→3: Moving from generalization-based to formulization-based representation of algebraic reasoning
1→2→3: Moving from context-based to generalization-based and then to the formulization-based representation of algebraic reasoning.

It can be claimed that 12 of the PMSMT illustrated formulization-based representation of algebraic reasoning by using formal signs to justify set expressions. While 5 of them achieved this by processing through different ways of representation of algebraic reasoning in order, 7 of them used formulization-based representation way of algebraic reasoning effectively by not using other ways. Moreover, 11 of PMSMT represented generalization-based algebraic reasoning. While 5 of them used this way as a stage to move toward the standard algebraic reasoning type, 2 of them reached this way coming from the first type and 4 of them directly represented this type in their solutions. Also, 6 of them illustrated syntactic algebraic reasoning type in their solutions. While 4 of them used this type as a step to move toward other types, 2 of them solved the questions directly using this way of representation of algebraic reasoning. Moreover, whole class discussion process about a problem occurred under the guidance of the instructor. For example, the instructor initiated the discussion by asking the problem about examining the truth of A∩(B–C) = (A∩B)–C and wanted a PMSMT using the context-based representation of algebraic reasoning to explain the solution as follows:

> S_4: I assigned the particular elements to the sets and made the intersection and difference operations. Hence, I attained the sets having same elements for both hand sides of the equation.

For this part of the argumentation, S_4 explained the truth of the equation as claim correctly. Then, he provided data by the definitions of operations. He provided insufficient warrant but the mathematical expressions of the operations and their transfer to the solution had missing part. This missing part was removed by a PMSMT using generalization-based representation of algebraic reasoning. She proposed mathematical expressions of the operations and explained the necessity of choosing and arbitrary element rather than assigning particular elements to the sets. This PMSMT completed the missing part of the data but she could not provide the complete and accurate warrant of the argumentation. Afterwards, a PMSMT using formulization-based representation of algebraic reasoning proposed the solution of the problem as the warrant appropriately and sufficiently as in Figure 5.

Discussion and Conclusion

The results of the study showed that representation of algebraic reasoning is important to understand mathematical concepts such as sets. In this way, preservice mathematics teachers can effectively comprehend the sets, operations on them and their properties. Also, their understanding and knowledge about sets can be determined and improved. In the study, there are three ways of representation of algebraic reasoning emerged through justification processes of set expressions. Toulmin's (1958/2003) argumentation model enhances and provides the perspective for analyzing algebraic reasoning based on the PMSMT's understanding of sets. Based on the view that Toulmin's model provides a beneficial way to represent mathematical classroom interactions (Uygun & Akyuz, 2019; Brown, 2017; Conner et al., 2014; Prusak, Hershkowitz & Schwarz, 2012), it supports the identification of important parts of mathematical discussions in the classrooms in the algebraic perspective. Moreover, this model could provide to illustrate and examine the learning processes and comprehend the ideas, reasoning and explanations of the PMSMT. This finding can be supported by previous research in the literature. In other words, the previous research show that Toulmin's model of argumentation proposes a beneficial way to share ideas, to make explanation to convince other about the truth of the idea, to listen counter ideas and their

justifications and provide evidences for the explanations (Knipping, 2008; Krummheuer, 1995). Hence, the processes of formation of algebraic reasoning and the differences between them could be examined in detail. After analyzing data by the Toulmin's model of argumentation, it was observed that the PMSMT used similar claim and data for the same problems. However, they linked data and claims by using different warrants because they reasoned and solved differently. In this respect, it could be stated that warrants would be important to focus on various reasoning ways of the PMSMT, how they represented and used their reasoning, and how they differentiated. As the bridge between the data and claim, the warrants necessitates to reason to make this connection and form meaningful argument. This finding can be encouraged by the results of the previous research in the literature examining the roles of warrant in mathematics education (Alcock & Weber, 2005; Conner, 2012; Rodd, 2000).

Generally warrant represents the solution processes of a problem. Based on this view, the warrants represented the PMSMT's usage of algebraic reasoning to justify set expressions and representation of algebraic reasoning. Hence, by focusing on the warrants of the argumentations, differences between the representation and usage of algebraic reasoning about the problems of sets were examined. The warrants provided by them were classified under three different titles as the themes of the analysis process. Hence, three ways of representation of algebraic reasoning on the sets emerged; context-based representation of algebraic reasoning, generalization-based representation of algebraic reasoning and formulization-based representation of algebraic reasoning. Afterwards, the PMSMT's representation of algebraic reasoning in the concept of sets was examined by these themes.

In the first way, context-based representation of algebraic reasoning was used to justify expressions. They formed specific contexts about expressions and used representations such as diagrams and formed particular contexts. The engagements of them using contexts can be linked with operational conception of algebraic reasoning included in the model of Sfard and Linchevski (1994) formed for the development of algebraic reasoning because the main focus point is on the operations. Moreover, this type might also be linked to the structuring layer of Harel (2008) because the learners focus on arithmetical structures and symbols. However, the usage of Venn-diagrams and shading regions have been examined in previous research and they have stated the important place of visualization in problem solving and explaining reasoning process (Hodgson, 1996; Giordano, 1990; Tall & Thompson, 1989).

In the second way, PMSMT used generalization-based representation of algebraic reasoning. In this way, they used and examined the formal definitions of main and simple set operations related to set expressions. By using these definitions, they tried to justify set expression using verbal expressions but could not effectively use standard related notations. At that point, their usage of verbal explanations in their expressions can be related to the effect of use and interpretation of natural language to understand and learn the concepts. This view can be encouraged by the researchers (Pimm, 1987; Walkerdine, 1988). They made some manipulations on signs, formulas and explanations. This manipulation is important to represent standard algebraic reasoning. Hence, it should be encouraged carefully since these manipulations performed on the signs necessitates to make changes on intention so that it becomes possible to focus on the signs meaningfully. Moreover, it can be added that the PMSMT could perform abstract manipulation of signs by attaching new meanings considering the rules as the rules of a game as explained in previous research (Husserl, 1970). On the other hand, if these kinds of manipulations are not made carefully, the efforts put forward to obtain algebraic reasoning may be unnecessary as Russell (1976) explained the manipulations performed on the signs formally as explaining the reality in an empty way. This process can be linked with transition from operational to structural conception with respect to the model of Sfard and Linchevski (1994). Moreover, this way can also be linked with the generalizing layer of Harel (2008) since they focus on variables and common form of a set of formulas. Also, it can be explained that PMSMT using the second way of representation of algebraic reasoning have the properties of structuring layer previously and have been attaining the properties of generalizing layer.

The last way of representation of algebraic reasoning emerged in the study is formulization-based representation of algebraic reasoning. They appropriately justified expressions by using formal algebraic notations. They could effectively generalize their structural knowledge about sets using standard related signs. It can be concluded that PMSMT could justify expressions so this can be linked with the structural dimension of algebra told by Kieran (1990), Kirshner (2001), Hoch and Dreyfus (2006). It can be explained that the participants attained structural conception in formal way in the model of Sfard and Linchevski (1996). Formulization-based algebraic reasoning can be linked with structural conception since structural conception is defined as the approach condensing the information and broadening the views (Sfard & Linchevski, 1994). Moreover, this way can also be related to the representing layer of Harel (2008) since they focus on symbolic and formal form of mathematical expressions. It can be stated that PMSMT have attained the properties of structuring and

generalizing layers previously and then they have begun to use symbolic and formal mathematical expressions as the representation system of algebra.

Based on the explanations above, it can be stated that Toulmin's (1958/2003) argumentation model enhanced the establishment of mathematical understanding. Through analyzing and identifying different representations of algebraic reasoning in sets, the PMSMT's mathematical knowledge was determined because the elements of the model focused on their usage of the knowledge. This explanation encourages the findings of previous research claiming the important role of argumentations on the establishment of mathematical knowledge (Rasmussen & Stephan, 2008; Uygun & Akyuz, 2019). The findings of the study show that the warrant has important role in identification of the differences between the representations of algebraic reasoning on sets. It does not only explain the difference, it also provides insight into the formation of algebraic reasoning. There exist distinctions between the warrants of the classroom interactions analyzed in the current study based on the explanations of Inglis, Meija-Ramos and Simpson (2007). They expressed the roles of warrant as reducing uncertainty and removing uncertainty. In the study, the warrant took the role as reducing the uncertainty in the context-based representation of algebraic reasoning since the PMSMT reasoned on the definitions of set operations and their usage on particular contexts were explained by the warrants. In the generalization-based representation of algebraic reasoning and formulization-based representation of algebraic reasoning, the warrant was used as removing the uncertainty since the PMSMT analyzed the reasons behind the set operations. Therefore, it could be stated that the Toulmin's model of argumentation gives insight into the identification and analysis of algebraic reasoning in classroom interactions. This finding encourages the explanation of Toulmin (1958/2003) and Inglis and colleagues (2007) about the warrants in mathematics education.

In the process of transition between representation ways of algebraic reasoning, most of the PMSMT follow all ways of representation of algebraic reasoning emerged in the study in order or from the second way to the third one or from the first way to the second one. When the topic of set is considered in our education system from secondary education to college level, it can be concluded that algebraic reasoning in sets is important since it is related to algebraic reasoning and the topics of the undergraduate course of Abstract Algebra (Hodgson, 1996). Therefore, it is important to help the PMSMT produce formal justifications for set expressions and they can be educated in a way explained in the present study. Moreover, while justifying set expressions and developing representation system for algebraic reasoning in sets, some PMSMT formed particular contexts and obtained specific knowledge about the context. By using main definitions, they generalized their contexts. It can result from the teaching style in our education system tendency of the PMSMT on moving specific examples to the general one. In our education system, specific examples are provided to the students by using specific numbers or quantities. Then, they are expected to make generalizations by grasping the common point between the examples (Baykul, 2012). This process maintains its existence in the process of sets. Even if the questions are organized and designed based on general terms, they can need to think and understand it in specific terms and contexts. Then, they can progress through the particular terms. In this respect, it may be said that whatever the grade levels are, the students may produce standard representation by forming contexts and then transferring it by using verbal statements in different ages in their life. Moreover, it was observed that the PMSMT could make transitions among different types of representations of algebraic reasoning. By developing their understanding, participating in discussions and solving problems, they could improve their representation of algebraic reasoning. This finding can be confirmed by the result of the previous research (Uygun & Akyuz, 2019; Jonassen & Kim, 2010; Staples & Newton, 2016). These previous research state that argumentations make the student improve their proficiency in practice and understandings about the mathematical concepts.

By the usage of Toulmin's model through analyzing algebraic reasoning on particular mathematical concepts as happened in the current study, a way or strategy has been provided for mathematics educators in order to explore the identification of algebraic reasoning performed by the PMSMT in the classroom conversations and focusing on the differences about how the PMSMT represent their algebraic reasoning. Hence, the mathematics educators can help the PMSMT develop their algebraic reasoning and represent their reasoning with accurate certainty in appropriate form. The usage of Toulmin's model on algebraic reasoning should be conducted to classroom interactions about different mathematical concepts and different grade levels so that perspective about the model in mathematics education can be provided effectively. For example, the middle school students' development of algebraic reasoning on the concept of patterns can be explored with the help of argumentation. Also, high school students' development of algebraic reasoning can be explored in the same way. In this respect, further research can be performed based on this suggestion. For example, this process can be repeated in computer-assisted learning environment. Different grade level of students' algebraic reasoning can be explored through their engagement in solving problem by related software and then they can discuss their solutions. Hence, their development of algebraic reasoning in a computer-based learning environment with the help of

argumentation. Moreover, a further study examining the representation of algebraic reasoning on sets can be conducted to different grade level of students. Hence, the differences and similarities can be explored.

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Appendix

1. Show that $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$ [item of Test 1]
2. Show that $A \cup (B \cap C) = (A \cup B) \cap (B \cup C)$ [item of Test 1]
3. Show that $A \cap (B - C) = (A \cap B) - C$ [item of Test 2]
4. Show that $A - (B \cup C) = (A - B) \cap (A - C)$ [item of Test 2]
5. Show that $A - B = A \cap B^c$ [item of Test 3]
6. Show that $A - B = A \cap B^c = B^c - A^c$ [item of Test 3]

The Mediator Effect of Stress on Teachers' Self-efficacy Beliefs and Job Satisfaction

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Abstract

This research aimed to determine the role of stress as a mediator in the effect of teachers' self-efficacy on their job satisfaction. To achieve this aim, correlational model was used in the research. The population of the research consists of the teachers working in the schools in Elazığ province in Turkey in the academic year of 2017-2018. Simple random sampling method was used to identify the teachers who would participate in the research and 310 teachers were reached in this context. "Stress Scale", "Job Satisfaction Scale" and "Teacher Self-efficacy Scale" were used to collect data. The predictive and mediating relationships between job satisfaction, stress, and teachers' self-efficacy beliefs were examined by Structural Equation Model (SEM). The simple mediation model was used in SEM. Research results show that teachers' self-efficacy (innovative behavior, coping behavior) has a positive effect on job satisfaction and stress has a negative effect on job satisfaction. Moreover, the stress is a mediator for teachers' self-efficacy variable in explaining job satisfaction.

Key words: Teacher, Teacher self-efficacy, Stress, Job satisfaction

Introduction

Job satisfaction is defined as positive feelings towards one's job which arise in the person as a result of evaluating the characteristics of that person's job. Job satisfaction is closely related to factors such as personal job performance (Judge, Thoresen, Bono, & Patton, 2001; Robbins & Judge, 2013), organizational citizenship behaviour (Bateman & Organ, 1983; Moorman, 1993), customer satisfaction (Ugboro & Obeng, 2000), attendance or absenteeism (Scott & Taylor, 1985), and the sum of many elements (Robbins & Judge, 2013). For a teacher, job satisfaction is also most likely the result of teachers' competence (Caprara, Barbaranelli, Steca & Malone, 2006). In fact, Ma and MacMillan (1999) describe one of the major contributors to job satisfaction in the teaching profession to be teacher competence. For this reason, teachers' self-efficacy beliefs and job satisfaction have attracted the attention of researchers (Skaalvik & Skaalvik, 2010, 2011) and policymakers in the last thirty years (Aldridge & Fraser, 2016).

Self-efficacy is a motivation theory that was put forward by Albert Bandura. Self-efficacy belief is a judgment of the individual's power to organize the actions necessary to perform a certain task (Bandura, 1986). Self-efficacy is not about how talented an individual is, but about how they believe their own abilities affect their behaviour and performance (Okutan & Kahveci, 2012). Self-efficacy beliefs are more often found in professions related to special fields, such as teaching (Çapri & Çelikkaleli, 2008). Teacher self-efficacy is defined as the beliefs that a teacher has about his or her abilities to perform tasks in class (Tschannen-Moran & Woolfolk Hoy, 2001) or their beliefs about the ability of a student to reach the expected results (Klassen, Ucher, & Bong, 2010). Personal judgments about their own abilities and skills are very important for the effectiveness of the teaching process while teachers fulfil their duties and produce solutions to the problems they encounter (Özdemir, 2008). In its 2013–2014 report, the Teaching and Learning International Survey (TALIS) also showed that teachers with high self-efficacy beliefs provide positive classroom management, effective teaching, and high levels of student participation (OECD, 2014).

According to Caprara, Barbaranelli, Borgogni, Petitta, and Rubinacci (2003) and Caprara et al. (2006), self-efficacy beliefs play an important role in teacher loyalty and job satisfaction; teachers with high self-efficacy beliefs are more likely to have stronger job satisfaction, better interpersonal interactions, and more favourable

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conditions than other teachers. In addition, if a teacher possesses a sense of confidence in their teaching abilities and believes s/he can control her/his classroom, there is likely to be an accompanying feeling of happiness (Bolton, 2018). For this reason, job satisfaction and self-efficacy are important variables in maintaining a teacher's professionalism (Pillay, Goddard, & Wilss, 2005). In fact, studies on teacher self-efficacy and job satisfaction show that these concepts are important for increasing performance and productivity in education (Buluç & Demir, 2015).

Self-efficacy has an important role in social learning theory because it affects not only direct actions but also other determinants of action (Bandura, 1997). For example, self-efficacy belief affects the individual's direct job satisfaction, while job stress affects individual stress. Self-efficacy refers to the belief in one's ability to cope with stress and problems in general (Scholz & Schwarzer, 2005). Woolfolk Hoy and Davis (2006) also point out that teacher' self-efficacy affects many positive factors in the classroom, including low stress, student achievement, and long-term careers. In some studies (Brouwers & Tomic, 2000, Bolton, 2018; Caprara et al., 2003; Caprara et al., 2006; Greenglass & Burke, 2003; Klassen et al., 2010), teachers with high job satisfaction showed high levels of motivational behaviour and performance, and low levels of stress, anxiety, and burnout. Teachers with a high level of job satisfaction or self-efficacy beliefs can be said to have low levels of stress because, according to Bandura (1997), people with high self-efficacy beliefs do not run away from the problems they face and have to struggle with and are very determined to fulfil their tasks successfully. Individuals with low self-efficacy beliefs also experience more stress, anxiety, and dissatisfaction than individuals who have strong self-efficacy beliefs in terms of performing certain tasks.

Teaching is defined as a high stress occupation and teacher stress puts not only teachers' health and effectiveness at risk, but also students' academic achievements. Therefore, coping with teacher stress is an issue that is worthy of attention (İpek et al., 2018). Self-efficacy is also defined as the belief in a person's ability to cope with stressful and challenging experiences in general (Cadiz, 1989; Scholz & Schwarzer, 2005). Bandura (1977) also stated that the primary determinant of how much insistence s/he will insist on in order to overcome stressful situations is competence anticipation. For this reason, the successes or failures of organizations are directly related to the stress levels of employees (Akgündüz, 2006) and their self-efficacy (Bandura, 1977). However, self-efficacy is an important factor in increasing individual performance, increasing cognitive, social and behavioural skills, and increasing satisfaction (Bandura, 1982, 1997), while stress is an important factor in reducing individual efficiency, reducing job satisfaction, and influencing performance (Gümüştekin & Öztemiz, 2005). In the same way, self-efficacy increases, and stress reduction contributes to the effectiveness of teaching (Pajares, 1992). In addition, while self-efficacy beliefs strengthen the current status of teachers (Demir, 2019), high stress in teaching predicts lower teacher self-efficacy which leads to intentions to quit the profession (Skaalvik & Skaalvik, 2016).

There are many studies about the factors affecting teachers' job satisfaction. Some of these studies show that there is a significant and opposite relationship between job satisfaction and stress (Brewer & McMahan Landers, 2003; Pavett, 1986; Günbay & Tokel, 2012; Klassen & Chiu, 2010; Özkaya, Yakın, & Ekinci, 2008; Tuten & Neidermeyer, 2008), there is a significant and positive relationship between job satisfaction and self-efficacy beliefs (Aldridge & Fraser, 2016; Buluç & Demir, 2015; Bolton, 2018; Telef, 2011), and self-efficacy is the determinant of job satisfaction (Canrinus, Helms-Lorenz, Beijaard, Buitink, & Hofman, 2012; Caprara et al., 2006; Judge, Bono, Erez, & Locke, 2005; Klassen & Chiu, 2010; Moè, Pazzaglia & Ronconi, 2010). There are also studies in the literature which show that there is a significant and opposite relationship between self-efficacy and stress (Collie, Shapka, & Perry, 2012; Luszczynska, Gutierrez-Dona, & Schwarzer, 2005; Rimm & Jerusalem, 1999; Vaezi & Fallah, 2011) and that self-efficacy is the determinant of stress (Grau, Salanova, & Peirò, 2001; Schwarzer & Hallum, 2008). Self-efficacy and collective self-efficacy, which feed from the same sources (Bandura, 1997), have different conceptual structures; nevertheless, there is a strong relationship between them (Skaalvik & Skaalvik, 2007). In the study conducted by Demir (2019), it was observed that collective teacher competence positively affects teachers' job satisfaction levels. In addition, self-efficacy may play a critical role as a protective factor in preventing stress; thus, it is particularly important to explore and extend this research area in the literature (Makara-Studzińska, Golonka, & Izydorczyk, 2019). However, there is no study which examines the relationship between job satisfaction, teacher self-efficacy, and stress, and especially the effect of teacher self-efficacy on job satisfaction using stress as a mediation variable.

This study, which focuses on the mediator effect of the stress variable on the effect of teacher self-efficacy on teachers' job satisfaction, was designed to contribute to the literature in the area of achieving organizational goals in the context of schools. Firstly, a conceptual framework was outlined which demonstrates the relationship between self-efficacy belief, stress, and job satisfaction. Then, the effect of self-efficacy on job satisfaction and stress was determined. Next, the effect of stress on job satisfaction was determined and, finally,

the mediator effect of stress on teachers' self-efficacy beliefs and job satisfaction was tested. It can be said that this study is important in terms of examining teachers' self-efficacy beliefs, job satisfaction, and stress levels together; this can be considered remarkable in terms of educational management literature. In this context, the main purpose of this study was to determine the effect of stress on the relationship between teachers' job satisfaction and teacher self-efficacy.

Method

Study Model

The research is based on the correlational model within quantitative research. The identification and examination of human behaviour in both individual and social relationships is a very complex process. In order to make this process a little more understandable, it is sometimes possible to determine these relationships at a simpler level and try to understand them. Correlational studies are also preferred for determining these relationships (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2011). This model determines the presence and/or degree of exchange between two or more variables (Karasar, 2009). In this study, the aim was to find out the relationships between job satisfaction, teachers' self-efficacy, and stress variables. Thus, the problem and hypotheses of the research are as follows:

Research problem: Does stress influence the effect of teachers' self-efficacy on job satisfaction?
Hypothesis 1: Teachers' self-efficacy (innovative behaviour and coping behaviour) affects job satisfaction positively.
Hypothesis 2: Stress affects job satisfaction negatively.
Hypothesis 3: Teachers' self-efficacy (innovative behaviour, coping behaviour) affects stress negatively.

Population and Sample

The population of the study constituted 7634 teachers working in public schools in Elazığ province in Turkey in 2017–2018 academic year. Simple random sampling method was used to determine the teachers asked to give feedback in the survey. In this method, all units in the population have an equal and independent chance of being selected for the sample (Arıkan, 2004). Within the scope of the research, 323 teachers who were working in unselected schools were contacted. Thirteen of the collected surveys were not evaluated because they were randomly filled. Thus, a total of 310 available and validated surveys were analysed. It can be said that 310 teachers represent the universe at 90% reliability and 4.58% error level. In addition, the critical sample size (Critical N-CN) should be considered to determine the minimum number of samples required for a structural equation model to fit well (Hu & Bentler, 1995). This value was calculated as 199.91 in this study.

Sixty percent (n = 186) of the teachers comprising the sample were female and 40% (n = 124) were male; 55.8% (n = 173) were single and 44.2% (n = 137) were married; 71.9% (n = 223) had graduated with a degree and 28.1% (n = 87) had a postgraduate degree; 52.3% (n = 162) of the teachers were teacher candidates and 47.7% (n = 148) were senior teachers.

Data Collection Tools

The 'Stress Scale', 'Job Satisfaction Scale', and 'Teacher Self-Efficacy Scale' were used to collect data in accordance with the scope of the study.

Stress Scale: The scale was developed by Karakuş (2013). The scale consists of one dimension and four items. Assessment of the scale is in the form of a five-point Likert scale. Karakuş (2013) calculated the internal consistency coefficient of the scale as .70. The Stress Scale was rated between (1) *absolutely disagree* and (5) *completely agree*. The construct validity of the one-factor scale was provided by the Confirmatory Factor Analysis (CFA). The results of the analysis showed that the goodness of fit indices were $\chi^2 = .10$, $df = 2$, RMSEA = .0000, SRMR= .0021, GFI = 1.00, AGFI = 1.00, NFI = 1.00, NNFI = 1.01, CFI = 1.00 and IFI = 1.00. In this study, the internal consistency coefficient was calculated as .80.

Job Satisfaction Scale: The scale was adapted from Hackman and Oldham's (1975) Job Characteristics Survey and measures the individual's general job satisfaction in one dimension. The General Job Satisfaction Scale, consisting of five items and one dimension, was adapted to Turkish by Basım and Şeşen (2009) and used by Çetin (2011). The scale is rated between (1) *absolutely disagree* and (5) *completely agree*. The internal

consistency coefficient of the scale was calculated as .76 by Basım and Şeşen (2009) and .76 by Çetin (2011). The construct validity of the one-factor scale was provided by the CFA. The results of the analysis showed that the goodness of fit indices were $\chi^2/df = 3.605$, CFI = .97, GFI = .96. In this study, the internal consistency coefficient was calculated as .96.

Teacher Self-Efficacy Scale: The scale was developed by Schmitz and Schwarzer (2000) and adapted to Turkish by Yılmaz, Köseoğlu, Gerçek, and Soran (2004). Reliability alpha values at different times in the original German language scale have been calculated as .81 and .76. As a result of the factor analysis, it was revealed that the 4-point Likert-type scale had two dimensions (coping behaviour and innovative behaviour) and the number of items on the original scale was eight on the Turkish scale. The internal consistency coefficient of the adapted scale was .79. In this study, this value was calculated as .94.

Data Analysis

For the descriptive analysis of the data and the calculation of the internal consistency coefficients of the scales, SPSS 22 was used. LISREL 8.80 was also used to examine the predictive and mediator relationships between job satisfaction, stress, and teacher self-efficacy beliefs using a Structural Equation Model (SEM).

SEM is a comprehensive statistical approach used to test models in which causal and reciprocal relationships coexist between observed and latent variables. In the regression analysis, only the direct correlations of the explanatory variables are determined and the measurement errors of these variables are ignored. However, in SEM, measurement errors are included in the model to deal with the direct and indirect effects of the model together, and the testing, estimation, and development of multivariate complex models are provided (Çelik & Yılmaz, 2013). The simple mediation model was used in SEM. The simple mediation model consists of independent, mediator and dependent variables (McKinnon, 2008). The mediator variable is a dependent variable that is part of the cause-and-effect relationship between the two variables. In order to understand more easily, the previously established hypotheses and the basic model in which the research variables are included, see Figure 1.
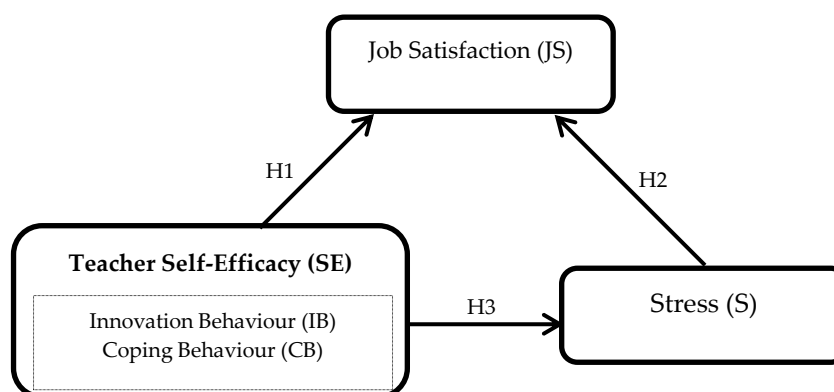
Figure 1. Basic model of the research

As seen in Figure 1, teachers' self-efficacy beliefs were determined to be an external latent variable (independent variable), job satisfaction an internal latent variable (dependent variable), and internal variable stress an internal latent (dependent) variable.

Both the measurement model and the structural model were tested using the Maximum Likelihood Estimation Method. The Maximum Likelihood Estimation Method is the most commonly used adaptive function in SEM (Çelik & Yılmaz, 2013). The χ2 / df ratio was used to test the fit of the model. Jöreskog and Sörbom (1993) suggested a comparison of the expected value of the sampling distribution with the severity of χ2, indicating that for a good model the ratio of χ2 / df should be a small value, with a ratio between 2 and 3 indicating that the model is acceptable. The RMSEA, NNFI, NFI, CFI, GFI, IFI, AGFI, and SRMR indices were also checked to control the model fit. The analysis results show that the model's goodness of fit values were not within acceptable ranges. To ensure the model's goodness of fit, items with a high correlation between error variances were identified and error covariances of these items (SE1 and SE2; S3 and S4) were combined. After this correction, it was found that the fit was good. Findings of compliance indices of the measurement model obtained after correction are shown in Table 1.

Table 1. Compliance indices results of the measurement model

Paths	β	χ^2 / sd	RMSEA	NNFI	NFI	CFI	GFI	IFI	AGFI	SRMR
CB→JS	.84									
IB → JS	.83									
S → JS	-.65	2.01	.057	.99	.98	.99	.92	.99	.89	.045
CB →S	-.51									
IB →S	-.52									
	Fit	Good fit	Acceptable	Good fit	Good fit	Good fit	Acceptable	Good fit	Acceptable	Good fit

When the fit indices are interpreted, it can be seen that the model has good fit, as shown in Table 1. Values of RMSEA equal to or less than .05 indicate good agreement; values between .08 and .10 indicate acceptable agreement (Hayduk, 1987). Goodness of fit indices such as NNFI, CFI, GFI, and AGFI has values between 0 and 1, and the closeness of these values to 1 indicates a better fit for the model (Hair, Tatham, Anderson & Black, 1998; Jöreskog, 1996).

After the compliance values of the measurement model were found to be sufficient, the mediation test was conducted. There are required conditions needed to show the effect of mediation (Baron & Kenny, 1986). In order to speak about effect of mediation, it is necessary to determine whether the indirect effect of the independent variable (via the mediator variable) on the dependent variable is meaningful or not. Several tests are used for this and one of these tests is the Sobel test (Sobel, 1982). This test is calculated by using the uncorrected regression coefficients (β) of dependent, independent, and mediator variables and their standard error values. For this research, the Sobel test was used to determine the mediation effect of job satisfaction on the effect of teachers' self-efficacy on coping behaviour and innovative behaviour.

Results

To determine the effect of teachers' self-efficacy on job satisfaction using the mediating role of stress, various analyses were made, and the findings are presented in this section.

Five different models were set up to determine the relationships between variables with different alternative models and to test the mediation model. In Model 1, the direct effect of teachers' self-efficacy dimensions on job satisfaction is tested. In Model 2, the direct effect of stress on job satisfaction is tested. In Model 3, the direct effect of teachers' self-efficacy on stress is tested. Model 4 tests self-efficacy on job satisfaction and stress on job satisfaction at the same time. In Model 5, self-efficacy of teacher is tested using the stress mediator effect on job satisfaction. The first three models were constructed to demonstrate the relationship between dependent, independent, and mediating variables, and the last two models were designed to demonstrate the relationship of stress mediation to the effects of teachers' self-efficacy relating to job satisfaction. The standardized regression coefficients and fit indices for the tested models are given in Table 2.

Table 2. Findings and fit indices for the tested models

Models	Paths	β	χ^2 / df	p	RMSEA	GFI	NFI	NNFI	CFI	IFI	SRMR	AGFI
Model 1	CB → JS	.52	2.44	.00	.068	.93	.99	.99	.99	.99	.022	.90
	IB → JS	.35										
Model 2	S → JS	-.65	1.82	.00	.052	.97	.99	.99	.99	.99	.040	.94
Model 3	CB → S	-.20	1.75	.00	.049	.96	.99	.99	.99	.99	.051	.93
	IB → S	-.34										
Model 4	CB → JS	.54	2.43	.00	.068	.91	.98	.99	.99	.99	.058	.87
	IB → JS	.34										
	CB → S	-.31										
	IB → S	-.25										
Model 5	CB → JS	.47	2.01	.00	.057	.92	.98	.99	.99	.99	.045	.89
	IB → JS	.25										
	S → JS	-.28										
	CB → S	-.19										
	IB → S	-.34										

As seen in Table 2, there are direct relationships between the dimensions of teachers' self-efficacy coping behaviour (β = .52, p < .01) and innovative behaviour (β = .52, p <.01) and dimensions of job satisfaction in Model 1. The effect of self-efficacy on job satisfaction in both dimensions is statistically significant. The dimensions of teachers' self-efficacy were found to predict job satisfaction. In Model 2, it was determined that stress has a statistically significant and negative effect on job satisfaction (β = -.65, p <.01) and stress predicts job satisfaction. In Model 3, teachers' self-efficacy coping behaviour dimension (β = -.20, p <.01) and the innovative behaviour dimension (β = -.34, p <.01) have statistically significant effects on stress. This means that both dimensions of self-efficacy predict stress.

While Model 4 is established as a model in which stress is not determined as a mediator variable (in other words, the path between stress and job satisfaction is removed), Model 5 is designed to be a model in which the paths between stress and job satisfaction are added. According to the fit indices showing in Table 2 (χ^2 / df = 2.01; GFI = .92; AGFI = .89; CFI = .99; IFI = .99; NFI = .98; NNFI = .99; SRMR = .045; RMSEA = .057) it can be said that the path (S $\rightarrow$ JS), which is added in Model 5 and allows stress to be a mediator variable, is very important for the model. The model (Model 5) testing the mediating effect of stress in the relationship between teachers' self-efficacy dimensions and job satisfaction is shown in Figure 2.
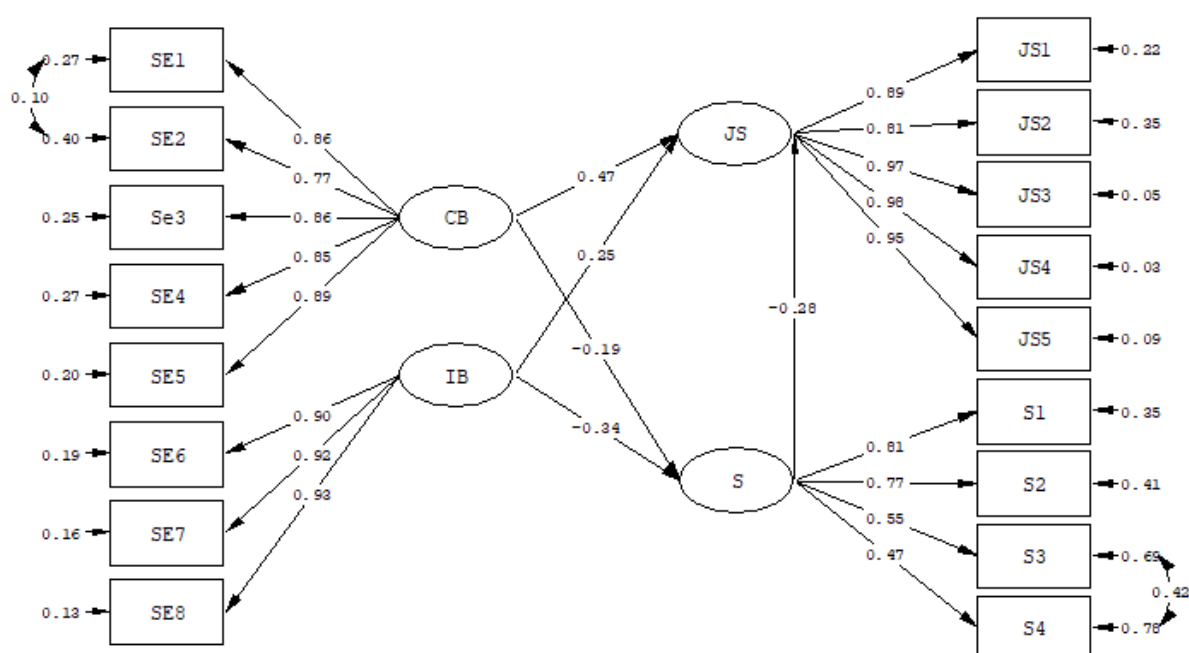
Figure 2. Effect of stress mediation between job satisfaction and teacher self-efficacy

In Figure 2, standardized regression coefficients between job satisfaction and coping behaviour dimension (β = .84, p <.01) and innovative behaviour dimension (β = .83, p <.01) decrease in the coping behaviour dimension (β = .47, p <.01; z = 5.708; p <.01) and the innovative behaviour dimension (β = .25, p <.01; z = 5.969; p < .01) after the model was established. In other words, teachers' self-efficacy leads to a decrease in stress. In addition, teachers' self-efficacy causes a decrease in the effect of stress on job satisfaction (β = -.28, p <.01). In other words, teachers' self-efficacy reduces both the stress level and the negative effect of stress on job satisfaction.

Findings related to the direct, indirect, and total effect coefficients of dependent and independent variables of the model are presented in Table 3.

Table 3. Direct, indirect and total effect coefficients between dependent and independent variables

	S Direct Effect	CB Direct Effect	IB Direct Effect	CB Indirect Effect	IB Indirect Effect	CB Total Effect	IB Total Effect	Total Effect
JS	-.28	.47	.25	.05	.10	.52	.35	.61

As seen in Table 3, when the stress mediator variable is added to the model, the coping behaviour dimension (β = .47) and the innovative behaviour dimension (β = .25) have direct effects on job satisfaction. However, adding the stress variable to the model increased the total effect of coping dimension (β = .52) and innovative behavior dimension (β = .35) on job satisfaction (β = .61). Therefore, stress has a mediating effect on the influence of

self-efficacy on job satisfaction. Also, the goodness of fit of the model is very close to the goodness of fit of the measurement model ($\chi2$ / df = 2.01; GFI = .92; AGFI = .89; CFI = .99; IFI = .99; NFI = .98; NNFI = .99; SRMR = .045; RMSEA = .057). The results of the model in Figure 2 are presented in Table 4.

Table 4. Results of SEM for research model

Dimensons/ Items	Standard loads	t-value	R^2	Cronbach's α	$\bar{X}$	sd
JS				.96	3.24	1.394
JS1	.89		.78		3.17	1.70
JS2	.81	19.32	.65		3.22	1.38
JS3	.97	30.39	.95		3.31	1.45
JS4	.96	31.26	.97		3.27	1.47
JS5	.95	28.35	.91		3.26	1.45
S				.80	3.02	.882
S1	.81		.65		2.89	1.14
S2	.77	11.72	.59		2.95	1.19
S3	.55	8.90	.31		3.13	1.13
S5	.47	7.50	.22		3.15	1.04
CB				.93	2.72	.863
SE1	.86	18.63	.73		2.65	1.03
SE2	.77	15.86	.60		2.68	.84
SE3	.86	18.91	.75		2.78	1.03
SE4	.85	18.52	.73		2.73	.97
SE5	.89	19.98	.80		2.73	.99
IB				.94	2.74	.935
SE6	.90	20.38	.81		2.73	.97
SE7	.92	20.96	.84		2.77	1.00
SE8	.93	21.48	.87		2.71	1.00
Structural Equations		Error Variance		R^2		
$JS = -.28*S + .47 * CB + .25 * IB$		.21		.79		
$S = -.21 * CB -.36 * IB$		.83		.27		

As shown in Table 4, as a result of testing using Model 5, the factor loads of the coping behaviour dimension vary between .77 and .89; the factor loads of the innovative behaviour dimension vary between .90 and .93; factor loads of job satisfaction vary between .81 and .98, and factor loads of stress vary between .47 and .81. The internal consistency coefficient of job satisfaction is .96, the internal consistency coefficient of stress is .80, the internal consistency coefficient of coping behaviour dimension is .93, and the internal consistency coefficient of the innovative behaviour dimension is .94. Regarding the explanation of latent variables of observed variables, if t values between 1.96–2.56 they are significant at .05 level and if above 2.56 they were significant at .01 level (Çokluk, Şekercioğlu, & Büyüköztürk, 2016). When the research model is examined, the t values of scale items are significant at .01 level. According to the structural equations obtained in the model, teachers' self-efficacy (coping behaviour and innovative behaviour dimensions) and stress explained 79% of job satisfaction; teachers' self-efficacy (coping behaviour and innovative behaviour) explained 27% of the stress.

There is a positive effect of teachers' self-efficacy dimensions (coping behaviour and innovative behaviour) on job satisfaction. In addition, stress negatively affects job satisfaction. Finally, the effect of teachers' self-efficacy on job satisfaction decreases when the stress variable is added to the model. This indicates that the stress variable is partially mediated by the teachers' self-efficacy variable (innovative behaviour and coping behaviour).

Conclusion

The aim of this research study was to determine the effect of teacher self-efficacy on job satisfaction through stress variation. When the results obtained were evaluated, it was shown that all the hypotheses formed for the research were accepted within the scope of the established structural model. According to the results obtained in the model, both the innovative behaviour dimension and the coping behaviour dimension of teacher self-efficacy affect teachers' job satisfaction positively (Hypothesis 1) and stress level negatively (Hypothesis 3). On the other hand, teachers' stress level affects job satisfaction levels negatively (Hypothesis 2). These results show that teacher self-efficacy directly affects job satisfaction and stress in both dimensions. In other words, teachers' self-

efficacy beliefs are predictive of job satisfaction and stress levels. In addition, stress levels of teachers are also predictive of job satisfaction.

In addition, the effect of teacher self-efficacy dimensions (innovative behaviour, coping behaviour) in describing job satisfaction decreased when the stress variable was included in the model. In other words, the stress variable reduces the effect of both dimensions of teacher self-efficacy on job satisfaction. Hence, it has been determined that stress is partially mediated by the effect of teacher self-efficacy on job satisfaction. Thus, it has been revealed that teacher self-efficacy dimensions have direct effects on job satisfaction as well as indirect effects. This result shows that increasing teachers' self-efficacy beliefs and reducing stress levels will make a significant contribution to increasing teachers' job satisfaction. As a result, it can be said that teachers' self-efficacy beliefs and stress levels are important variables in explaining job satisfaction.

Discussion

The basis of the structural model formed within the scope of this research study is the effect of teacher self-efficacy beliefs on teachers' job satisfaction. In order to evaluate the results of the research together with the results of previous studies, it is appropriate to examine the related literature.

Research has shown that teacher self-efficacy directly affects job satisfaction and stress in both dimensions (innovative behaviour, coping behaviour). In the study conducted by Buluç and Demir (2015), it was found that there is a positive and moderate level correlation between teacher self-efficacy and job satisfaction. When the significance of the regression coefficients was examined in the same study, it was revealed that the research results are similar to the results of the present study and the self-efficacy dimensions are significant predictors of job satisfaction. Caprara et al. (2006) found that teacher self-efficacy had positive effects on job satisfaction and academic achievement of students. Demir (2019) found that collective teacher efficacy positively affects teacher job satisfaction. Türkoglu, Cansoy, and Parlar (2017) found that all dimensions of teachers' self-efficacy had a low level positive correlation with job satisfaction and that teacher self-efficacy was an important predictor of job satisfaction. Saraçoğlu, Aldan Karademir, Dinçer, and Dedebali (2017) also found that there was a low level significantly positive relationship between teacher self-efficacy and job satisfaction in their study.

In the study by Telef (2011), positively low and moderate relationships were found between job satisfaction and general self-efficacy beliefs and teacher self-efficacy dimensions. Even if the self-efficacy of teachers is at a low level, job satisfaction increases. In the study of Turcan (2011), it was also found that there was a moderately positive significant correlation between teachers' self-efficacy and job satisfaction levels. This statistical result shows that as teachers' self-efficacy beliefs increase, the level of job satisfaction also increases. According to Turcan (2011), the higher people's efficacy beliefs, the higher is job satisfaction. The findings of studies by Bolton (2018) and Caprara et al. (2006) confirmed that teacher self-efficacy was a statistically significant predictor of job satisfaction. In the literature, teacher self-efficacy has been found to be an important predictor of job satisfaction in studies that examine the relationship between teacher self-efficacy and job satisfaction. The results of these studies and the results obtained in the present study are parallel with each other. These results, which are related to teacher self-efficacy and job satisfaction (i.e., satisfaction of teachers when they perform their duties and self-efficacy beliefs that express their belief in their profession), influence each other positively. For this reason, it can be said that the level of job satisfaction will be increased by increasing teacher self-efficacy.

The results of the research show that self-efficacy beliefs affect teachers' job satisfaction as well as stress levels. However, self-efficacy, which affects job satisfaction positively, affects stress levels negatively. It has been shown that most of the studies performed in the literature support the relationship between self-efficacy and stress demonstrated in the present study. Studies conducted by Collie et al. (2012) and Klassen and Chiu (2010) have shown that teacher self-efficacy positively affects job satisfaction and is negatively related to stress. In parallel with these results, İpek et al. (2018), Gamsız, Yazıcı, and Altun (2013), and Schwarzer and Hallum (2008) found a low level and negative significant relationship between teacher self-efficacy and stress level. The findings of Bolton's (2018) study showed that improving teacher efficacy is important in reducing stress in teachers. Unlike studies showing that self-efficacy and stress are negatively related, it has been found that there is a positive and low correlation between self-efficacy and stress in the study conducted by Reilly, Dhingra and Boduszek (2013). When studies in the field and current research results are evaluated together, it can be said that teacher self-efficacy is an important predictor of stress. Because teachers with high self-efficacy are aware of the adequacy of their work, the level of work-related stress will be lower than the stress level of teachers with low self-efficacy. Teachers with low stress levels are expected to show more positive attitudes and behaviour.

Hence, teachers' high self-efficacy beliefs can reduce stress levels and cause teachers to exhibit more positive attitudes and behaviour.

At the end of the research study, it was shown that the stress levels of the teachers affected job satisfaction negatively. Research findings by Gamsız et al. (2013) found that one of the strongest predictors of teachers' job satisfaction was stress sources. The negative relationship between stress sources and job satisfaction showed that job satisfaction decreased as stress levels increased. Compatible with the literature, Reillyet al. (2013) found negative and moderate correlations between job satisfaction and stress in their study. According to the results supported by Klassen and Chiu (2010), Collie et al., (2012) and Klassen et al., (2010), it was found that teachers' job satisfaction and stress levels are negatively correlated. In general, there is a negative relationship between stress and job satisfaction. When the present research and previous studies were evaluated, it was revealed that the stress levels of the teachers predicted job satisfaction. According to Liu and Ramsey (2008), the strongest effect on teachers' job satisfaction is stress caused by poor working conditions. However, difficult working conditions do not always lead to high levels of stress. Administrators who want to improve job satisfaction are required to make efforts to reduce the stress levels experienced by teachers. Removing stress sources will lead to an increase in job satisfaction.

According to the findings of this research, there is a mediator effect of stress on the influence of teachers' self-efficacy on job satisfaction. It is possible to find studies (e.g., Klassen & Chiu, 2010; Collie et al., 2012; Gamsızet al., 2013) in the literature that investigate the relationship between teacher self-efficacy, job satisfaction, and stress variables. However, no study has been found to determine the mediating effect of the stress variable on self-efficacy and job satisfaction. Therefore, no comparisons were made with any studies performed on the subject in terms of the mediation effect. However, Schwarzer and Hallum (2008) found that the stress variable plays a mediating role in the effect of teacher self-efficacy on burnout levels. Self-efficacy beliefs and stress levels were found to be important factors in explaining teachers' job satisfaction. Self-efficacy belief affects job satisfaction positively and affects stress level negatively. Stress as a mediator variable reduces the effect of self-efficacy on job satisfaction.

Recommendations

A teacher's sense of self-sufficiency in her/his profession is closely related to her/his belief in teaching self-efficacy. The results of the research also show that teacher self-efficacy is an important factor in an increase in job satisfaction and decrease of stress levels. Therefore, the establishment of a mechanism to increase teachers' self-efficacy in schools can increase the quality of teachers as well as their efficiency. Considering that teachers' 'self-efficacy beliefs can be improved by training, it is necessary to focus on developing teachers' professional self-efficacy beliefs in pedagogical formation programmes and in-service training.

The results of the research show that stress level affects teachers' job satisfaction negatively and reduces self-efficacy perceptions of job satisfaction. Therefore, stress levels can be reduced and teachers' job satisfaction can be increased through studies on the sources of stress that cause stress in teachers, because identifying stress sources can be a guide to reducing the stress levels of teachers or to identifying adjustments which can be made to cope with stress. The development of a teacher's self-efficacy belief can be achieved by knowing what qualifications a profession needs. For this reason, the teacher self-efficacy development process can start with teacher training programmes and then continue with problem-based in-service training.

One of the limitations of this study is that it was only conducted with teachers who work in a certain area. Therefore, it is proposed that the work be repeated using different universes and samples to increase the generalizability of the results of this study. The model, in which the relationships between teachers' self-efficacy, stress levels, and job satisfaction are determined, can provide a basic predictor for future research. For this reason, the effects of teacher self-efficacy beliefs on job satisfaction and stress levels and their causes can be examined in depth through qualitative research. When analysing the effect of teacher self-efficacy in describing job satisfaction, incorporating different mediator variables into the model can allow research studies to obtain more effective results.

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Probing School Image at High Schools: Scale Development and a Discriminant Analysis

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Abstract

This study aimed at developing a valid and reliable measurement tool to determine school image at high schools and investigating the discrimination level of the scale among the students from different high school types in Turkey. Two studies were conducted to a) develop a valid and reliable measurement tool and b) to examine the discrimination power of the scale among students. The research was conducted in a province in Southeastern Turkey, and 668 students from six different high schools participated in the research in the 2017-2018 academic year. The construct validity of the scale was probed via exploratory and confirmatory factor analyses. The findings indicated that the School Image Scale (SIS) incorporated six factors (school-parent interaction, art-sports activities, student profile, teacher-administrator characteristics, student support services, and physical conditions) and 28 items. Results of discriminant analysis carried out with 300 students from 5 different high schools revealed that the sub-dimensions of the scale were effective in distinguishing between high schools. The most effective independent variable in distinguishing students studying at different school types was student profile, physical conditions, art-sports activities, teacher-administrator characteristics, student support services, and school-parent interaction variables, respectively. The related independent variables were discussed in order of importance in light of the relevant literature.

Keywords: School image, Scale development, Discriminant analysis, High schools, Students

Introduction

The term "image" has been defined and investigated in research contexts concerning profit and non-profit organizations, higher education institutions (HEIs) and schools from kindergarten to secondary level. Although image is suggested to have led to confusion due to the polysemy of the term itself (Beerli Palacio, Díaz Meneses, & Pérez Pérez, 2002) and its being more complex than the low-high continuum (Brown & Mazzarol, 2009) in the literature, it seems possible to compose an array of common aspects related to image of organizations. As an alive asset constructed based on both tangible and intangible elements of an organization (Karacabey, Özdere, & Bozkuş, 2016; Küçüksüleymanoğlu, 2015), or functional and emotional components (Kennedy, 1977; cf. Wilkins & Huisman, 2013), organizational image is proposed by Schuler (2004) to be a mental model holding cognitive, affective and sensorial information about the organization which is mostly received from many sources not usually controlled by the organization. It is a composite of various elements both reflecting and communicating the identity of an organization (Karaosmanoglu & Melewar, 2006). Accordingly, da Costa, Pelissari & Gonzalez (2018) proposed that image can be regarded as a snapshot of an organization based on cognitive and affective aspects in accordance with the observer and the one observed; and it reflects both internal and external stakeholders' perceptions of the organization (Polat, 2011). Consistently, Kazoleas, Kim, and Moffitt (2001) advocate that organizational image is the result of the complex and multifaceted struggle of attributes processed by individuals through the messages from the organization and social, historical, personal lived experiences, and material factors. It is a feature ascribing to a translation of impressions constructed as a result of the individuals' interaction with various organizational components (da Costa & Pelissari, 2016).

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School image refers to a school's predominating picture among the stakeholders of the schools. Perceptions and impressions regarding the activities and the study program of the school describe the school image (Eger, Egerová, & Pisoňová, 2018). School image serves as a critical tool for the improvement of school reputation and for school choice among students, teachers, and parents (Wong, Woo, & Tong, 2016; Köybaşı, Uğurlu, & Ceylan, 2017). In an atmosphere of contesting marketing and branding activities, it can also help schools to recruit and retain students at schools and spread positive word-of-mouth (Li & Hung, 2009). School image, as put by Wong et al. (2016), is crucial for the improvement of school reputation through satisfying students. Strong image perceptions by stakeholders can lead them to find the school highly attractive, which may positively affect their loyalty to the school (Akman & Özdemir, 2019).

Research on school image and reputation indicates that various aspects of school can be critical for students' and parents' school choice (Nartgün & Kaya, 2016) and affect student behavior. Alikasifoglu, Erginoz, Ercan, Uysal, Kaymak, et al. (2004), for instance, revealed that poor school image, among other variables, was correlated with the fighting behaviors of the students. Consistently, Aras, Günay, Özan, and Orcin (2007) unearthed that fourth-year high school students' most anomalous behaviors were associated with their schools. Polat (2011) found evidence on the relationship between organizational image and student achievement. Moreover, as the Hesapçıoğlu and Nohutçu (1999) study demonstrated, parents paid more attention to the history of the school (i.e. being an established one), the physical conditions and position of the school, the instructional process, and teachers' professional competencies, which are some of the main elements of school image, while preferring private schools. The quality of professors (Marič, Pavlin, & Ferjan, 2010) or teachers (Malik et al., 2015) and of their lectures and learning content (Marič et al., 2010), the teaching quality (da Costa & Pelissari, 2016), the educational programs provided (Karacabey et al., 2016), resources and training of graduates (Lafuente-Ruiz-de-Sabando, Zorrilla, & Forcada, 2018), the physical conditions (Bakioğlu & Bahçeci, 2010), program features and characteristics, entry requirements, level of tuition fees and campus location (Wilkins & Huisman, 2013) are all the topics explored to be image-related for educational organizations.

Although there is a burgeoning body of research on higher education institutions' image (i.e. university image) (see, for example, Atabek & Atabek, 2015; Cerit, 2006; Lafuente-Ruiz-de-Sabando et al., 2018; Karacabey et al., 2016; Pampaloni, 2010; Pérez & Torres, 2017; Polat, 2011; Lee & Chen, 2018; Uluçay, 2018; Alcaide-Pulido, Alves, & Gutiérrez-Villar, 2017; Şişli & Köse, 2015), few research studies have focused on the image of K-12 schools. For example, the Van Wyk and Bisschoff (2012) study was centered on the development of an image scale for South African high schools. Eger et al. (2018) examine school image as a concept and present the application of a measurement tool developed based on the semantic differential method. Şeker (2011) developed a school attitude questionnaire including a few school image-related items, as well as other aspects, for elementary school students. Ereş (2011) conducted a study on Turkish basic schools' image and suggested further research on the images of high schools and colleges. However, the instrument used in the Ereş (2011) study was prepared to solicit public opinion regarding basic schools, and it was developed to be used for adults. In order to improve schools, it is required to investigate the image perceptions of students who are one of the main school stakeholders. Knowing what aspects or elements of schools are positively perceived and in which spectrums improvement is needed is a must for school leaders who play a pivotal role in fulfilling the expectations of both internal and external stakeholders. Positive image building is significant for building an appealing reputation over time and contributing to existing students' better outcomes at their schools and for newcomers to choose schools. Students' holding positive views of their school can positively affect the attitudes towards both the school and themselves as students (Şeker, 2011). This study, therefore, aimed at developing a valid and reliable measurement tool to determine the school image of high schools based on high school students' perceptions and investigating the discrimination level of the scale among the students studying at different high school types in Turkey. The findings obtained from the discriminant analysis are used to determine whether the sub-dimensions of the scale are effective in classifying students accurately.

Method

The present research had two-fold purposes; it, therefore, incorporated two different studies. First of all, a scale development study was conducted for high school students (Study I) and then the levels to which school image dimensions discriminated students of different high schools (Study II) were determined.

Study I (The School Image Scale development phase)

Research model
This research was designed as a scale development study that centered on using survey research in the development of a school image scale to be used for high schools.

The procedure
For the scale development study, a literature review was carried out first and it was determined to include seven dimensions (School-parent interaction, student support services, student profile, school administration, school achievement, teacher characteristics, and physical conditions of school) in the scale based on the conceptual framework and research findings by Bakioğlu and Bahçeci (2010), da Costa and Pelissari (2016), Eger et al. (2018), Karacabey et al. (2016), Lafuente-Ruiz-de-Sabando et al. (2018), Malik et al. (2015), Marič et al. (2010), and Van Wyk and Bisschoff (2012). An item-pool of 52 items was constructed in accordance with these dimensions. While constructing the pool, the researchers carefully examined the concept of school image and other related measurement tools. The 52-item form was structured as a five-point Likert type scale with the choices of "completely disagree, mostly disagree, somehow agree, mostly agree, and completely agree". The form was presented to four measurement and evaluation experts, one curriculum and instruction expert, and one educational administration expert for checking the suitability of the items and to four experts working on image and school image for content validity. Based on the views of the experts, a draft form including 42 items, of which three were reversed, was constructed after removing 10 inappropriate or convergent items (see Appendix 1). Prior to the main implementation of the scale, a pilot study was conducted with 18 Anatolian High School students (10=female, 8=male) to check the comprehensibility of the items. The draft was finalized as the final form because the students did not mention anything about any items regarding the difficulty in understanding them. The data collected from 18 students were not added to the data obtained in the main study.

Study groups
A number of factors were observed in the selection of the study groups. In this vein, the research was conducted in a province in Southeastern Turkey, considering the principle of accessibility, and as it is the desired condition to reach out individuals with maximum heterogeneity in terms of the relevant characteristic to be measured, it was targeted to reach out the individuals with such potential in all types of high schools for data collection. Five out of eight high schools (Anatolian, Science, Social Sciences, Anatolian Vocational and Technical, Anatolian Imam Hatip, Military, Fine Arts, and Sports) opened by the Ministry of National Education (MoNE) were reached out in the study. Therefore, the data were collected from the students of six different high schools among which were a Science High School, two Anatolian High Schools, a Fine Arts High School, a Vocational and Technical Anatolian High School, and an Anatolian Imam Hatip High School in the first semester of the 2017-2018 academic year. The other types of high schools except for the said ones were not opened in the province by the MoNE, which could be considered as a limitation of the study. Furthermore, Science Project High School and Social Sciences Project High School were determined in 2017/June and 2015/June; for this reason, data were not collected from these schools due to the idea that school image regarding these schools may not have settled yet. The high schools from which data were collected had classroom sizes ranging between 10-35 students. Additionally, it was paid attention to gathering all of the data from 10th and 11th grade students in particular as it was believed that it was early for 9th grade students to recognize all aspects of the schools and 12th graders were kept out of study on the advice of school administrations due to students' preparation for university entrance exam. It was then decided that both 10th and 11th graders were ideal for the study, which made sampling criterion-based.

Both exploratory (EFA) and confirmatory (CFA) factor analysis were used. The data were collected from 668 high school students studying at different high school types. This number was determined after removing the data obtained from 5 female and 10 male students who marked the same choice for all of the items and/or mostly left unanswered items. It is suggested in the literature that it is appropriate to conduct EFA first and then CFA (Jöreskog & Sörbom, 1993). For this reason, EFA was done first, and CFA was carried out following EFA on different groups. The School Image Scale development study was conducted with the data collected from two different study groups. It is proposed to carry out EFA and CFA implementations on different groups in the literature (Fabrigar, Wegener, MacCallum, & Strahan, 1999), a similar procedure was therefore followed in the current study. Composite reliability (CR) and average variance extracted (AVE) were calculated using relevant formulae regarding the factor loadings belonging to the group data subjected to CFA, and discriminant and convergent validity of the scale was examined. Cronbach's alpha reliability coefficients were calculated based on the EFA and CFA data separately. Table 1 indicates the demographic information regarding study groups.

Table 1. Demographic Information Regarding the Study Groups

Variable	Level	EFA (f) Common factor variance Alpha reliability	CFA (f) AVE CR Alpha reliability
Gender	Female	187	198
	Male	151	132
Grade level	10	137	117
	11	201	213
School	AIHHS	81	53
	AHS-A	43	64
	AHS-B	90	45
	FAHS	39	25
	VTAHS	85	33
	SHS	-	110
Total		338	330

As can be seen in Table 1, EFA was conducted on the data from 338 students, and CFA was performed with the data from 330 students. Of the EFA group (female n=187, male n=151), 81 students were at Anatolian Imam Hatip High School (AIHHS), 43 at Anatolian High School-A (AHS-A), 90 at Anatolian High School-B (AHS-B), 39 at Fine Arts High School (FAHS), and 85 at Vocational and Technical Anatolian High School (VTAHS). 137 students were 10th graders, and 201 were 11th graders. Among the CFA group (female n=198, male n=132) were 53 Anatolian Imam Hatip High School students, 64 Anatolian High School-A students, 45 Anatolian High School-B students, 25 Fine Arts High School students, 33 Vocational and Technical Anatolian High School students, and 110 Science High School (SHS) students. 117 students in the group were 10th graders, and 213 of them were 11th graders. Moreover, Cronbach's alpha reliability was calculated for both the EFA group and the CFA group separately. As suggested in the literature, EFA can be used for five-point Likert type scales when the number of the data collected is five times greater than the total number of the items in the scale (Cattell, 1978). For CFA, however, the data set should be 10 times greater than the total number of the items (Kline, 2011). Based on these suggestions, it may be asserted that the sample sizes reached out were adequate for EFA and CFA.

Collection of data
Permission was firstly taken from school administrations for data collection, and the data were gathered in the classrooms at a specified time. During the collection of the data, instructions were read to the participants, and detailed information was given to them regarding the significance of responding to all of the items and marking only one choice for each item. The significance of responding to each item sincerely was also mentioned, and it was assured that the data would be kept confidential.

Data analysis
EFA was performed in order to obtain evidence about the construct validity of the School Image Scale (SIS), and then the construct of the scale was confirmed through CFA. Composite reliability (CR) and average variance extracted (AVE) were calculated using relevant formulae regarding the factor loadings belonging to the group data subjected to CFA, and discriminant and convergent validity of the scale was examined. Cronbach's alpha reliability coefficient for the sub-dimensions was calculated. The analyses were performed using SPSS 20.0, IBM SPSS AMOS 20, and Microsoft Excel 10 programs.

Before performing EFA, the Kaiser-Meyer-Olkin (KMO) value was examined for the appropriateness of the data for factor analysis and Bartlett's Test of Sphericity results were investigated to determine normal distribution. The fact that the KMO value is greater than .60 and the result of Bartlett's Test of Sphericity is statistically significant means that the data is suitable for factor analysis. The results of the analyses demonstrated that the KMO value was 830; and chi-square value was significant [χ^2=3076.719, df=378, p<.01], and it was decided that the data set was appropriate for EFA (Kalaycı, 2016; Şencan, 2005).

The principal component technique which is one of the various factorization techniques was preferred in EFA. Proposing that there were significant relationships between sub-dimensions of the scale (the correlation table given in the section regarding discriminant validity confirms this proposal), the varimax rotation technique was used in the research. The researchers benefitted from the eigenvalues and the scree plot of the scale to determine the factor number of the scale. The factors whose eigenvalues were over 1 were selected. As a result of the principal component technique, 12 factors whose eigenvalues were greater than 1 were determined for 42 items.

The contribution of these factors to the total variance was found to be 63.14%. The scree plot is presented in Figure 1.
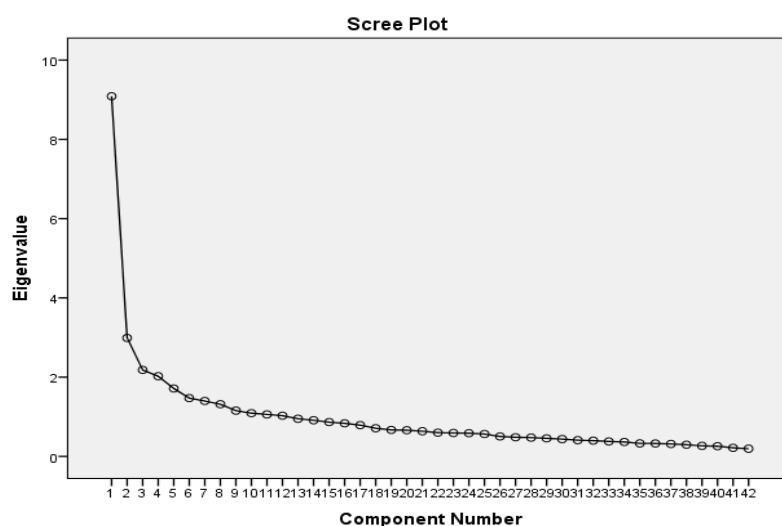
Figure 1. The scree plot regarding the SIS

When the scree plot in Figure 1 is examined, it can be seen that six factors had significant contributions to the explained variance, and the degree of the contribution of the factors was small and close to each other after the sixth one. Therefore, it was decided to repeat the factor analysis for six factors by paying attention to the number of factors specified in the theoretical framework during the scale development phase. The factor loadings of the items subjected to EFA were examined, and it was decided to eliminate the items with factor loadings below .45 (Tabachnick & Fidell, 2007); however, there were no items below .45. It was paid attention that one item had high loading in only one factor. It was accepted as a criterion that there was at least 0.1 difference between the factor loading of one item in one factor and other factors (Kline, 2011). Overlapping items were omitted from the scale respectively starting from the items with the highest overlapping according to the analyses, and the analyses were repeated each time. Thus, 14 items out of 42 were removed from the scale, and a scale including 28 items was obtained. EFA was repeated after the removal of 14 items, and it was revealed that the scale had six factors explaining 54.48% of the total variance. Principal components analysis in the EFA and varimax rotation indicated that a six-factorial construct explaining 54.48% of the total variance was congruent with theoretical explanations and interpretable. Table 2 shows the EFA results regarding the School Image Scale (SIS).

Table 2. EFA results regarding the SIS

Rotated factor loadings							
	Factors						
	1	2	3	4	5	6	*Common factor variance*
i32	**.764**	.069	-.010	-.056	.171	.096	.630
i36	**.747**	.197	-.076	-.024	.100	.164	.640
i33	**.725**	.194	.069	-.094	.070	.097	.591
i35	**.694**	.171	.053	-.032	-.090	.110	.535
i31	**.665**	.130	.094	-.201	.313	.031	.607
i34	**.659**	.088	.128	.019	-.039	-.043	.462
i37	**.607**	.296	.073	.059	.132	.086	.490
i22	**.499**	-.007	.168	.114	.290	.192	.411
i21	**.468**	-.024	.271	.207	.151	-.044	.361
i17	.352	**.737**	.102	.111	.003	.088	.698
i16	.316	**.734**	.099	.048	.033	.085	.659
i19	-.019	**.673**	.064	-.078	.317	-.103	.575
i18	.114	**.654**	-.007	-.029	.184	-.050	.478
i25	.226	**.488**	.104	.085	-.038	.373	.448

i3	-.017	-.007	**.776**	.097	.162	.109	.650
i2	.081	.081	**.740**	-.039	.023	-.079	.569
i1	.146	.187	**.687**	.027	-.039	.018	.531
i4	.202	-.001	**.530**	.125	-.031	.306	.432
i28	.001	.160	-.038	**.735**	-.041	-.040	.571
i5	.023	.049	.271	**.683**	.007	.190	.579
i6	-.027	-.129	-.104	**.668**	-.143	-.048	.497
i27	-.066	.012	.155	**.602**	.185	.164	.452
i39	.143	.145	.026	.000	**.737**	.189	.621
i40	.114	.179	.102	-.266	**.711**	.149	.654
i38	.240	.100	-.010	.202	**.651**	-.118	.546
i8	.013	.073	.101	.005	.065	**.749**	.581
i15	.188	-.091	-.033	.107	.182	**.595**	.443
i9	.344	.376	.184	.110	-.127	**.471**	.544
Explained variance %	**15.966**	**9.747**	**8.035**	**7.572**	**7.228**	**5.932**	
Eigenvalue	**6.485**	**2.487**	**1.793**	**1.704**	**1.556**	**1.229**	
Total explained variance 54.479%							

After the factor rotation, the first factor (teacher-administrator characteristics) was detected to include 9 items, the second factor (student profile) 5 items, the third one (school-parent interaction) 4 items, the fourth one (art-sports activities) 4 items, the fifth one (physical conditions) 3 items and the sixth factor (student support services) 3 items.

The items in the first factor of the School Image Scale (SIS) named "teacher-administrator characteristics" were rotated via varimax rotation technique, it was seen that the factor loadings of the items ranged between .468 and .764. The variance explained by this factor solely was 15.97%. The rotated factor loadings of the second factor, *student profile*, ranged between .488 and .737, and it explained 9.75% of the variance. The factor loadings of the factor "school-parent interaction" ranged between .530 and .776, and this factor explained 8.03% of the variance. The factor loadings of the items in the "Art-sports activities" were between .602 and .735, and it explained 7.57% of the variance. In the physical conditions factor, the factor loadings of the items ranged between .651 and .737, and the factor loadings of the items in the "student support services" factor were between .471 and .749. These factors explained 7.23% and 5.93% of the variance respectively. In the interpretation of the findings obtained from EFA, common factor variance must be considered too. Common factor variance is equal to the sum of the square roots of the factor loading of each item in the factors. Although there are different boundary values regarding common factor variance in the literature, it is proposed that the items whose common factor variance is below .20 are a significant indicator of heterogeneity and this means that these items must be removed from the scale (Tabachnick & Fidell, 2007). In this research, the lowest common factor variance was found to be .361, which referred to the homogeneity of the items.

The items were given current numbers after EFA (Appendix 1) and the final version of the scale consisting of six factors and 28 items were subjected to CFA. The maximum likelihood method was used as the items remained within the boundaries of the normal distribution as shown in the table. For the fit model constructed in CFA, a number of fit indices can be used according to the maximum likelihood method. Fit indices were found to be (CMIN/df)=1.848 good fit, RMSEA=.051 acceptable fit, AGFI=.858 acceptable fit, IFI=.905 acceptable fit, standardized RMR=.069 acceptable fit, CFI=.904 acceptable fit, and NNFI=.886 weak fit (Hair, Black, Babin, & Anderson, 2009; Hu & Bentler, 1999). Therefore, it may be asserted that the fit indices obtained in CFA for the six-factor construct of the scale were within the boundaries of acceptable and good fit indices and that the said construct is a valid model. In Appendix 2, standardized factor loadings regarding the six-factor construct of the School Image Scale (SIS) are presented. Table 3 demonstrates the values regarding each item's means, standard deviations, skewness and kurtosis, and factor loadings, and CR and AVE values are calculated for each factor.

Table 3. Means, standard deviations, skewness, kurtosis, factor loadings, CR and AVE values regarding the SIS

Factors	Item no	FL	Means	Sd	Skewness	Kurtosis	CR	AVE
Schoolparent	i1	0.62	3.642	1.049	-.501	-.122	0.790	0.485
	i2	0.73	3.479	1.255	-.406	-.834		
	i3	0.71	3.088	1.175	-.104	-.770		
	i4	0.72	3.291	1.206	-.376	-.712		
Artsports	i5	0.91	3.315	1.334	-.268	-1.056	0.707	0.402
	i6	0.58	3.398	1.299	-.467	-.855		
	i7	0.58	2.906	1.357	.164	-1.131		
	i8	0.33	3.558	1.306	-.505	-.886		
Stuprofile	i9	0.75	4.049	1.045	-1.127	.848	0.710	0.366
	i10	0.92	4.058	.958	-1.013	.913		
	i11	0.38	3.470	1.154	-.403	-.564		
	i12	0.39	3.355	.961	-.347	.164		
	i13	0.35	3.833	1.140	-1.043	.561		
Teachadminist	i14	0.41	3.294	1.310	-.402	-.873	0.863	0.417
	i15	0.57	4.094	.977	-.937	.314		
	i16	0.73	4.079	1.052	-1.215	1.055		
	i17	0.65	4.300	.925	-1.327	1.309		
	i18	0.69	4.170	.962	-1.046	.571		
	i19	0.58	3.785	1.097	-.886	.326		
	i20	0.70	4.085	1.010	-1.026	.497		
	i21	0.76	4.300	.849	-1.365	2.234		
	i22	0.65	3.982	.967	-.835	.328		
Stusupport	i23	0.37	3.652	1.199	-.580	-.516	0.676	0.436
	i24	0.88	4.079	1.049	-1.049	.397		
	i25	0.63	3.836	1.115	-.864	.094		
Physicalcond	i26	0.63	3.706	1.279	-.794	-.400	0.730	0.491
	i27	0.48	4.106	1.093	-1.251	.917		
	i28	0.92	3.736	1.141	-.842	.125		

As is seen in Table 3, skewness (-1.365 and .164) and kurtosis (-1.131 and 2.234) values ranged between -3 and +3 (Bentler, 2006), which indicated that the data were normally distributed. It was found that the factor loadings of the items ranged between .33 and .92 and that all of the items in the scale had adequate t values to explain latent variables. CR values were between .676 and .863. It is also stated that AVE values are required to be .5, but when CR value is over 0.6, 0.4 can be accepted to be sufficient for AVE (Fornell & Larcker, 1981). Furthermore, in all of the factors CR>AVE condition was met (Hair et al., 2009). All of these findings can be considered as evidence for the convergent validity of the scale. Findings regarding the discriminant validity of the scale are presented in Table 4.

Table 4. Findings regarding discriminant validity

		schoolparent	artsports	stuprofile	teachadminist	stusupport	physicalcond
		Correlation matrix					
Factors	schoolparent	**.696***					
	artsports	.176	**.634***				
	stuprofile	.239	.067	**.605***			
	teachadminist	.276	.006	.479	**.646***		
	stusupport	.275	.167	.325	.389	**.660***	
	physicalcond	.157	-.014	.340	.391	.219	**.701***

* AVE's square root

Table 4 shows that AVE's square root values related to each factor on the diagonal lines are greater than the correlations between the factors on the lines and columns. This situation can be regarded as evidence of the discriminant validity of the scale (Hair et al., 2009).

Reliability
For the reliability of the study, Cronbach's alpha reliability coefficients were determined for its factors, and they are presented in Table 5.

Table 5. Cronbach's alpha reliability coefficients

	Factor 1 (school parent)	Factor 2 (artsports)	Factor 3 (stuprofile)	Factor 4 (teach administ)	Factor 5 (stu support)	Factor 6 (physical cond)
Cronbach's alpha (for EFA group)	.686	.652	.761	.860	.500	.664
Cronbach's alpha (for CFA group)	.765	.606	.854	.916	.629	.774

The measurements whose reliability coefficients are equal to or above .70 are accepted to be reliable (Bernardi, 1994), and for the scales consisting of a small number of items, .60 and above can be accepted as sufficient for reliability (Sipahi, Yurtkoru, & Çinko, 2010). In light of these studies, the SIS can be accepted to be reliable.

Study II (Discrimination level of the sub-dimensions of the School Image Scale among students studying at different types of high schools)

Research model
The study was conducted using a correlational research model. Correlational research is conducted to elucidate important phenomena by identifying relationships among variables (Fraenkel, Wallen, & Hyun, 2012).

Study group
The study was done with the participation of 300 students (female=151, male=146), 60 students from each of five types of high schools which were Imam Hatip High School, Anatolian High School, Science High School, Fine Arts High School and Vocational and Technical Anatolian High School. 91 of the students were 10th graders, and 209 of them were 11th graders. The same procedures were followed in the selection of the sample for Study I and Study II. The explanations are not repeated here as they were given earlier.

Data collection tool
The procedures followed for reliability and validity of the scale developed to determine school image perceptions of high schools were presented under Study I.

Data analysis
The accurate classification proportion of students studying at Imam Hatip High School, Anatolian High School, Science High School, Fine Arts High School and Vocational and Technical Anatolian High School in terms of teacher-administrator characteristics, student profile, school-parent interaction, art-sports activities, physical conditions, and student support services which are the sub-dimensions of the School Image School was examined. Discriminant analysis was used in the research. Discriminant analysis is a robust statistical method that accepts quantitative variables as independent-predictive-discriminating variables and categorical variables illustrating group membership as dependent variables. Discriminant analysis is used to predict group membership, determine the variance proportion explained in the dependent variable by independent (quantitative) variables, and identify the significance order. In this research, high school membership was the dependent variable and the sub-dimensions of the SIS were the independent variables. In accordance with the purpose of the study, the data collected were analyzed using SPSS 20.0 program. There are some assumptions about discriminant analysis (Çokluk, Şekercioğlu, & Büyüköztürk, 2012; Kalaycı, 2016). Related assumptions and the explanations indicating that this research met these assumptions are provided below.

-The group size subjected to discriminant analysis must be 20 at least, and the sample size must be four or five times greater than the total number of the variables. 60 students from each of the five different high schools

participated in this research and the sample size was five times greater than six different independent variables (n=300), which shows that this assumption was met.

-Quantitative (predictive-independent) variables indicated multivariate normal distribution: School-parent: skewness: .249; kurtosis: -.599; art-sports: skewness: .202; kurtosis: -.730; stuprofile: skewness: -.117; kurtosis: -.789; teachadminist: skewness: -.107; kurtosis: -.737; stud-support: skewness: -.070; kurtosis: -.670; physicalcond: skewness: -.004; kurtosis: -1.051. These values evinced that multivariate normal distribution was ensured.

-Homogeneity of variance-covariance matrices: This assumption is one of the most fundamental assumptions of the method; however, discriminant analysis can be done in cases in which covariance matrices are not equal.

-Multicollinearity: As indicated in Study I, the correlation coefficients between the factors of the scale were rather low and this can be considered as evidence that there was no multicollinearity.

Findings

In this research, the accurate classification proportion of students studying at different high schools in terms of the sub-dimensions of the SIS (namely, teacher-administrator characteristics, student profile, school-parent interaction, art-sports activities, physical conditions, and student support services) was examined. In this sense, four functions were obtained in the analysis, and the eigenvalues regarding the functions emerged were 1.404, .821, .316, .038 respectively, as shown in Table 6.

Table 6. Eigenvalues regarding the functions

Function	Eigenvalue	Variance %	Cumulative %	Canonical correlation
1	1.404[a]	54.4	54.4	.764
2	.821[a]	31.8	86.3	.671
3	.316[a]	12.3	98.5	.490
4	.038[a]	1.5	100.0	.191

a.   *The first 4 canonical discriminant functions were used in the analysis.*

It is proposed that when eigenvalue is "0", then the discriminant function does not have discriminating power; however when the function moves away from "0", the discriminating power of the function increases. Even though it is not certain for eigenvalue, the values over .40 are regarded as "good" (Kalaycı, 2016). Canonical correlation resembles eigenvalue but gets values between 0 and 1 and demonstrates that how good the function generated discriminates groups (Hilbe, 1992). As the dependent variable (school type) is five-categorical, four functions were generated as is seen in the table. If there is more than one discriminant function, it is then accepted that the first function is the greatest one and is more discriminating than the other ones (Çokluk et al., 2012). The canonical correlation regarding the first function was .76, and it was detected that the discriminating power of the other functions decreased more and more.

The first function explained 54% of the variance in the dependent variables. Furthermore, the size/degree of correlation between dependent variable groups and discriminant function depends on the size/degree of the coefficient of canonical correlation. The square of the canonical correlation coefficient gives the percentage of the explained classification in the dependent variable by independent variables. When the canonical correlation coefficients in Table 7 are examined, $(.764)^2 = .58$ of the classification in the dependent variable was explained by the variables of the first function. The size of the eigenvalue regarding the first function generated via discriminant analysis, canonical correlation value and the explained variance indicated that the first function was most effective in distinguishing/classifying between groups.

Wilks' Lambda results testing the significance of discriminant functions are provided in Table 7. Because the first function had the greatest effect in discriminating groups, the significance test results regarding the first function are presented in Table 7.

Table 7. Wilks' Lambda test results

	Wilks' Lambda			
Function	Wilks' Lambda	Chi-square	df	p
1 - 4	.167	525.024	24	.000

As can be seen in Table 7, the chi-square value for the first function's Wilks' Lambda statistics was significant [χ^2 (1) = 525.024; p<.01]. This finding can be interpreted that predictive (independent) variables generated by

the first function had a significant effect in distinguishing between groups in the dependent variable (Tabachnick & Fidell, 2007). Whether the independent variables (the sub-dimensions of the SIS: teacher-administrator characteristics, student profile, school-parent interaction, art-sports activities, physical conditions, and student support services) included in the research had a significant effect in distinguishing between groups was investigated. Table 8 demonstrates the results of Wilks' Lambda test for the equality of group means.

Table 8. The results of Wilks' Lambda test for the equality of group means

Independent variables	Wilks' Lambda	F	df1	df2	p
schoolparent	.751	24.390	4	295	.000
artsports	.649	39.964	4	295	.000
stuprofile	.527	66.180	4	295	.000
teachadminist	.635	42.422	4	295	.000
stusupport	.770	21.971	4	295	.000
physicalcond	.586	52.110	4	295	.000

As indicated in Table 8, the independent variables had significant effects on distinguishing between all of the groups (school types). When Wilks' Lambda value gets closer to 0, then it means that the relevant variable's contribution increases. However, when Wilks' Lambda value gets closer to 1, then it can be interpreted that group means are similar and no discrimination can be made between groups (Diekhoff, 1992). In this sense, the independent variables which made the greatest contribution to the discriminant function were student profile, physical conditions, teacher-administrator characteristics, art-sports activities, school-parent interaction and student support services, respectively.

Table 9 demonstrates the coefficients regarding the standardized discriminant function which determines the contribution of each independent variable to the discriminant function. Relevant coefficients resemble beta coefficients of the variables in regression analysis.

Table 9. Standardized canonical discriminant function coefficients

Variables	1	2	3	4
schoolparent	-.086	.330	.440	-.553
artsports	-.395	.703	-.080	.351
stuprofile	.630	.073	-.642	.101
teachadminist	.184	.434	-.268	-.561
stusupport	.112	.108	.228	.739
physicalcond	.543	-.328	.760	.116

The most effective independent variable in distinguishing between students studying at different school types was student profile (.630) as demonstrated in Table 10. The student profile variable was followed by physical conditions (.543), art-sports activities (-.395), teacher-administrator characteristics (.184), student support services (.112) and school-parent interaction (-.086) variables, respectively. Pearson correlation coefficients demonstrating the relationship between student profile, physical conditions, art-sports activities, teacher-administrator characteristics, student support services, and school-parent interaction variables and discriminant function are presented in Table 10.

Table 10. Pearson correlation coefficients

Variables	1	2	3	4
stuprofile	.738*	.286	-.455	.116
physicalcond	.640*	.062	.634	.070
artsports	-.170	.774*	.115	.357
schoolparent	.078	.563*	.419	-.409
teachadminist	.497	.521*	-.004	-.375
stusupport	.315	.399	.219	.567*

* The largest absolute correlation between each variable and any discriminant function

When the matrix coefficients are examined in Table 10, it can be seen that the independent variable with the highest correlation with the discriminant function was student profile (.738); and the one with the lowest correlation with the discriminant function was school-parent interaction (.078). There were positive correlations between student profile, physical conditions, teacher-administrator characteristics, student support services, and school-parent interaction and the discriminant function; however, the art-sports activities variable had a negative

correlation with the discriminant function. Last, the results regarding the function's classification of the dependent variable (i.e. grouping students into their schools) are presented in Table 11.

Table 11. Accurate classification percentage of the dependent variable

	School	Anat. Imam Hatip HS	Anat. HS-B	Science HS	Fine Arts HS	Voc.-Tech. Anat. HS	Total
		Predicted group membership					
F	Anat. Imam Hatip HS	41	5	9	0	5	60
	Anatolian HS-B	2	35	11	4	8	60
	Science HS	8	4	42	6	0	60
	Fine Arts HS	2	7	1	42	8	60
	Voc.-Tech. Anat. HS	4	4	0	0	52	60
%	Anat. Imam Hatip HS	68.3	8.3	15.0	.0	8.3	100.0
	Anatolian HS-B	3.3	58.3	18.3	6.7	13.3	100.0
	Science HS	13.3	6.7	70.0	10.0	.0	100.0
	Fine Arts HS	3.3	11.7	1.7	70.0	13.3	100.0
	Voc.-Tech. Anat. HS	6.7	6.7	.0	.0	86.7	100.0
	70.7% of original grouped cases correctly classified.						

According to the classification results presented in Table 11, 41 out of 60 Imam Hatip HS students (68.3%), 35 of 60 Anatolian HS-B students (58.3%), 42 out of 60 Fine Arts HS students (70%), 42 out of 60 Science HS students (70%), 52 out of 60 Vocational and Technical Anatolian HS students (86.7%) were correctly classified. The total accurate classification proportion of the discriminant function was 70.7%. This research aimed at revealing the accurate classification proportion regarding students studying at five different school types in terms of the sub-dimensions of the SIS. The research was conducted with 60 students from each other high schools selected (n=300). Therefore, each student group constructed 20% of the sample. In other words, the selection proportion regarding student groups from each school was 20%. The maximum chance criterion was 20%, and the proportional chance criterion was $0.20^2+0.20^2+0.20^2+0.20^2+0.20^2=0.20$. The accurate discrimination level had been found to be 70.7%, which means that the accurate discrimination level of the discriminant function was higher than the chance criterion.

Discussion and Conclusion

The image of a school relates to some core aspects such as the quality of teaching staff, the lectures, learning content, teaching quality, educational programs and their features, resources, training of graduates, physical conditions of the school, entry requirements, level of tuition fees and campus location (Marič et al., 2010; Malik et al., 2015; da Costa & Pelissari, 2016; Karacabey et al., 2016; Lafuente-Ruiz-de-Sabando et al., 2018; Bakioğlu & Bahçeci, 2010; Wilkins & Huisman, 2013). Digging out stakeholders' impressions, especially those of students, of the schools and of related aspects are therefore vital for learning those perceived to be unsatisfactory and taking appropriate actions for improving and/or transforming school processes and/or aspects which may have substantial influence on students and positive outcomes and/or behaviors. Image perceptions render into key instruments in school reputation over time, which also dominates student perceptions even before attending a particular school type. The case of vocational and technical high schools in Turkey may be considered as an example of the transformation of negative image perceptions into undesired school reputation. Demir's (2017) study evinced this argument. He found that a great number of 8th-grade students held negative perceptions about vocational and technical high schools prior to attending them. With this in mind, the researchers, therefore, attempted to develop and validate a scale to be used to reveal students' image perceptions of high schools. The research included two studies in which scale development and discriminant analysis were carried out.

The sample of the study was comprised of 10th and 11th graders at five different types of high schools. The data were collected from 668 students of six different high schools (two schools were of the same type, i.e., Anatolian high school) in a province in Turkey, in the first semester of the 2017-2018 academic year. The analyses were performed using SPSS 20.0, IBM SPSS AMOS 20, and Microsoft Excel 10 programs. An item pool of 42 items was formed. Both exploratory (EFA) and confirmatory (CFA) factor analysis were used. EFA was conducted on the data from 338 students, and CFA was performed with the data from 330 students. 14 items out of 42 were removed from the scale, and a scale including 28 items was obtained. EFA was repeated after the removal of 14 items. The principal components analysis in the EFA and varimax rotation indicated that a six-factorial construct explaining 54.48% of the total variance was congruent with theoretical explanations and

interpretable. It was found that six factors had significant contributions to the explained variance. After the factor rotation, it was detected that the first factor (teacher-administrator characteristics) included 9 items, the second factor (student profile) 5 items, the third one (school-parent interaction) 4 items, the fourth one (art-sports activities) 4 items, the fifth one (physical conditions) 3 items and the sixth factor (student support services) 3 items.

As the CFA results indicated, fit indices were found to be (CMIN/df)=1.848 good fit, RMSEA=.051 acceptable fit, AGFI=.858 acceptable fit, IFI=.905 acceptable fit, standardized RMR=.069 acceptable fit, CFI=.904 acceptable fit and NNFI=.886 weak fit (Hair et al., 2009; Hu & Bentler, 1999). Skewness (-1.365 and .164) and kurtosis (-1.131 and 2.234) values indicated normal distribution.

Discriminant analysis was carried out with the participation of 300 students (female=151, male=146), 60 students from each of five types of high schools. The accurate classification proportion of students studying at different high schools in terms of the sub-dimensions of the SIS was also examined. In this sense, four functions were obtained in the analysis, and the eigenvalues regarding the functions emerged were 1.404, .821, .316, .038 respectively. The size of the eigenvalue regarding the first function generated via discriminant analysis, canonical correlation value and 54% of the variance concerning dependent variables by the first function indicated that the first function was most effective in distinguishing between groups. The chi-square value for the first function's Wilks' Lambda statistics was significant [x^2 (1) = 525.024; p<.01]. The independent variables which made the greatest contribution to the discriminant function were student profile, physical conditions, teacher-administrator characteristics, art-sports activities, school-parent interaction and student support services, respectively. The independent variable with the highest correlation with the discriminant function was student profile (.738), and the one with the lowest correlation with the discriminant function was school-parent interaction (.078). 41 out of 60 Imam Hatip HS students (68.3%), 35 of 60 Anatolian HS students (58.3%), 42 out of 60 Fine Arts HS students (70%), 42 out of 60 Science HS students (70%), 52 out of 60 Vocational and Technical Anatolian HS students (86.7%) were correctly classified. The total accurate classification proportion of the discriminant function was 70.7%. The accurate discrimination level of the discriminant function was higher than the chance criterion.

The discriminant analysis performed in the current study yielded some results concerning students' views towards their schools, which may be an influencing factor for students' behaviors at schools and school belonging and engagement. In relation to students' school image perceptions, the student profile was at the forefront of other dimensions. The perceived student profile was seen to affect school image perceptions among students. Previous research demonstrated that the type of high school that students have enrolled affects their self and future perceptions. Sever et al. (2016) revealed that science and social sciences high school students view themselves better than those studying at vocational and technical high schools. Furthermore, students question their value and significance in reference to other types of high schools. Their perceptions regarding the quality of schools also count. According to Hanushek, Lavy, and Hitomi (2008), students recognize quality differences (low or high-quality school) and act based on them. In this study, it was explored that physical conditions were also important in terms of school image perceptions of the students. In the Cemalcılar (2010) study, the quality of the school's physical quality, the availability of in-class and out-of-class resources and the sense of security predicted students' positive perceptions about schools strongly. Having better experiences at schools are associated with positive feelings about school, and positive feelings are related to positive behaviors. Baker (1999) found out that the students expressing high satisfaction with their schools perceived their relationships with their teachers more caring and supportive than those expressing low satisfaction with their schools. Students' satisfaction with their schools has a significant role in determining their behaviors towards their schools (Elmore & Huebner, 2010).

Another important function was seen to be teacher-administrator characteristics. In a study by Cemalcılar (2010), it was found that students' satisfaction with social relationships at school and the general environment of the school predicted students' belonging to the school. School-level social contextual conditions are critical in understanding students' sense of school belonging. These conditions help students cultivate positive feelings towards schools. Students' interactions with teachers and school principals, in particular, contribute to the development of positive feelings towards schools. Teachers are reported to be among the factors decreasing school engagement (Arastaman, 2009). Students who think that teachers have good relationships with them and are caring, emphatic and fair and help solve their personal problems feel more belonged to their schools (Allen, Kern, Vella-Brodrick, Hattie, & Waters, 2018). In a similar vein, research indicates that teachers influence school and classroom engagement (See, for example, Skinner & Belmont, 1993; Uslu & Gizir, 2017). Improving schools in terms of physical structure and materials, making lessons more attractive for students, developing the quality and quantity of socio-cultural activities organized within the school can contribute to the

development of students' school belonging (Sarı & Özgök, 2014). Apart from these effective elements, parental involvement has also significant effects on student performance at school (Danışman, 2017). Therefore, developing students' images regarding their schools may help enhance their sense of school belonging and engagement, which may lead to better school outcomes.

It was concluded based on the results that the SIS is a valid and reliable measurement tool which can be used for determining students' perceptions of high schools and a discriminating power among students of different high school types. This research is not exempt from some limitations. First of all, only a limited number of school types were included in the study. Therefore, further research must be conducted with the participants from different high school types not included in the current study, and reliability and validity studies should be repeated accordingly. The scale can be used to reveal which students in what kind of high schools have lower or higher perceptions regarding their schools' image.

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Appendix 1:

Current no	No	Items	Completely disagree	Mostly disagree	Somehow disagree	Mostly agree	Completely agree
1	1	Okulumuz veli ile işbirliğine açıktır.	1	2	3	4	5
2	2	Okulumuz velilerle iletişim halindedir. (ev ziyaretleri, tlf vs.)	1	2	3	4	5
3	3	Okulumuzda okul aile birliği aktif çalışır.	1	2	3	4	5
4	4	Uygun öğrenme ortamı sağlayabilmek için okulumuz ve aileler ortak çaba gösterir.	1	2	3	4	5
5	5	Okulumuzda sanatsal çalışmalar önemsenir.	1	2	3	4	5
6	6	Okulumuzda sportif etkinlikler desteklenir.	1	2	3	4	5
	7	Okulumuzda konser, gezi, piknik gibi sosyal etkinlikler gerçekleştirilir.	1	2	3	4	5
23	8	Okulumuzda öğrencilere etkili rehberlik ve psikolojik danışmanlık hizmeti sunulur.	1	2	3	4	5
24	9	Okulumuzda üniversite sınavlarına hazırlık çalışmaları desteklenir.	1	2	3	4	5
	10	Okulumuzda öğrencilerin akademik gelişimi önemsenir.	1	2	3	4	5
	11	Okulumuzda alınacak kararlarda önce öğrenci yararı düşünülür.	1	2	3	4	5
	12	Okulumuzda bilimsel projeler, bilimsel araştırmalar teşvik edilir.	1	2	3	4	5
	13	Okulumuzda her öğrencinin farklı özelliklere sahip olduğu dikkate alınır.	1	2	3	4	5
	14	Okulumuzda öğrenci görüşlerine değer verilir.	1	2	3	4	5
25	15	Okulumuzda başarı ödüllendirilir.	1	2	3	4	5
9	16	Okulumuzdaki öğrenciler derslerine önem verir.	1	2	3	4	5
10	17	Okulumuzdaki öğrenciler başarılıdır.	1	2	3	4	5
11	18	Okulumuzdaki öğrenciler saygılıdır.	1	2	3	4	5
12	19	Okulumuzdaki öğrenciler okul kurallarına uyar.	1	2	3	4	5
	20	Okulumuzdaki öğrencilerin aileleri okul harcamalarından kaçınır.	1	2	3	4	5
14	21	Okulumuzdaki yöneticiler öğrencilere adil davranır.	1	2	3	4	5
15	22	Okulumuzdaki yöneticiler okulumuzun gelişmesi için gayret eder.	1	2	3	4	5
	23	Okulumuzdaki herkes uyulması gereken kuralları bilir.	1	2	3	4	5
	24	Okulumuzda yönetici ve öğretmenler işbirliği içerisinde çalışır.	1	2	3	4	5
13	25	Okulumuzdan mezun olanlar iyi bölümlere yerleşir.	1	2	3	4	5
	26	Okulumuzun herhangi bir alanda öne çıkan bir başarısı yoktur.	1	2	3	4	5
7	27	Okulumuz sanatsal alanda başarılı bir geçmişe sahiptir.	1	2	3	4	5
8	28	Okulumuz spor alanında başarılı bir geçmişe sahiptir.	1	2	3	4	5
	29	Okulumuz akademik olarak başarılı bir geçmişe sahiptir.	1	2	3	4	5
	30	Okulumuz çevrede tercih edilen bir kurumdur.	1	2	3	4	5
16	31	Okulumuzdaki öğretmenler öğrencilerine örnek davranışlarıyla model olur.	1	2	3	4	5
17	32	Okulumuzdaki öğretmenler iletişime açıktır.	1	2	3	4	5
18	33	Okulumuzdaki öğretmenler işini severek yapar.	1	2	3	4	5
19	34	Okulumuzdaki öğretmenler öğrencilerine adaletli davranır.	1	2	3	4	5
20	35	Okulumuzdaki öğretmenler alanında uzmandır.	1	2	3	4	5
21	36	Okulumuzdaki öğretmenler öğrenmemizi destekleyici tutumlar sergiler.	1	2	3	4	5
22	37	Okulumuzdaki öğretmenler sınıf ortamını yönetmede başarılıdır.	1	2	3	4	5
26	38	Okulumuzda güvenli oyun alanları mevcuttur.	1	2	3	4	5
27	39	Okulumuzun elektrik, su, ısınma vb. olanakları yeterlidir.	1	2	3	4	5
28	40	Okulumuz temizdir.	1	2	3	4	5

	41	Okulumuzdaki derslikler bilgisayar, projeksiyon, akıllı tahta gibi gerekli teknolojik donanıma sahiptir.	1	2	3	4	5
	42	Okulumuzun derslik ve koridorları boş duvarlardan ibarettir.	1	2	3	4	5

Factor 1 (schoolparent): i1, i2, i3, i4
Factor 2 (art-sports): i5, i6, i7, i8
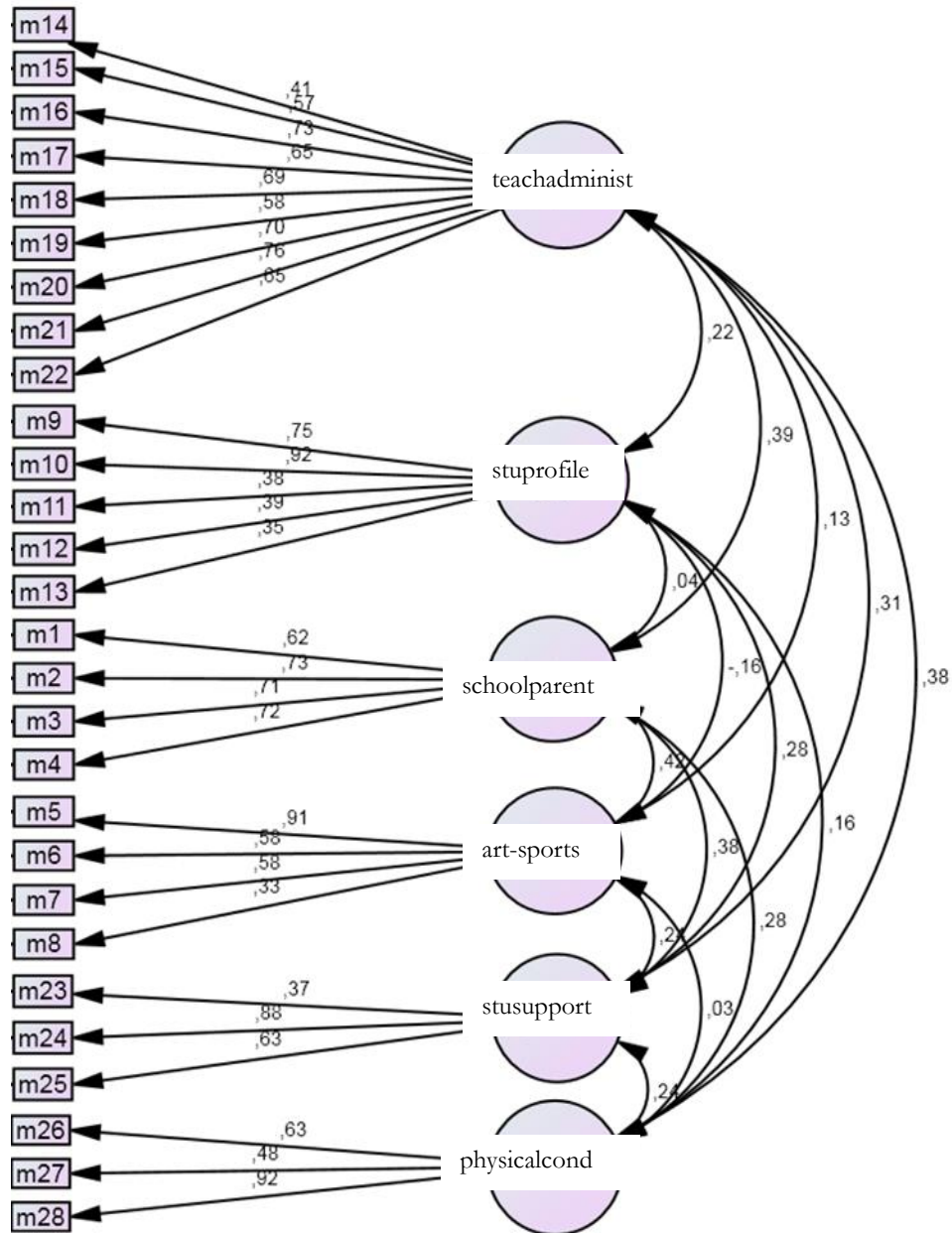Factor 3 (stuprofile): i9, i10, i11, i12, i13
Factor 4 (teachadminist): i14, i15, i16, i17, i18, i19, i20, i21, i22
Factor 5 (stusupport): i23, i24, i25
Factor 6 (physicalcond): i26, i27, i28
There are no reverse items in the scale.

Appendix 2

Role of Morphological and Metalinguistic Awareness on Reading among Turkish EFL Learners

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Role of Morphological and Metalinguistic Awareness on Reading among Turkish EFL Learners

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Abstract

This study investigates the effect of morphological treatment on morphological awareness and reading comprehension skill in a foreign language teaching. Experimental design was used in this study which was conducted with 74 freshmen who are studying at Translation and Interpreting Department. Following the Oxford Quick Placement Test and Nation's Vocabulary Knowledge Test, the participants were divided into two groups as experimental and control groups. Before starting the training process, both groups were pretested with 'Morphological Correction Test (MCT)' and 'Reading Comprehension Test (RCT)'. Following the completion of the pre-test, the treatment period of experimental group for 2 semesters started, while the control group completed the same exercises and studies without focusing on the morphological awareness. Behind the training, post-test study was applied to both groups and the differences were analysed. According to the results, the experimental group outperformed the control group in MCT and RCT. In other words, the morphological awareness of the experimental group increased efficiently; in addition to this, their reading comprehension skills developed as well. Besides, it can be said that the participants benefited effectively and consciously from the explicit training period of morphological awareness and this helped them improve their metalinguistic capacity.

Key words: Morphological awareness, Metalinguistic awareness, Reading, Language teaching

Introduction

Vocabulary learning in terms of information of word implications and morphological awareness are the two language abilities theorized to be basic in reading perception. Words are generally comprised of smaller and recognizable units called morphemes and realizing what a morpheme implies encourages one to comprehend or figure the importance of new words. Thus, morphological awareness helps to decode the words, infer their meaning and encourage learners to understand and comprehend the complex words in texts (Amirjalili & Jabbari, 2018; Carlisle, 2003). In literature, there are many studies which contribute morphological awareness realization inside vocabulary learning in English (e.g., Carlisle, 2000; Carlisle & Fleming, 2003; Chen, Ramı'rez, Luo, Geva, & Ku, 2012; Lam, Chen, Geva, Luo, & Hong, 2012; McBride-Chang, Wagner, Muse, Chow, & Shu, 2005; Nagy, Beminger, & Abbott, 2006; Sparks & Deacon, 2015) and emphasize the importance of vocabulary knowledge in reading comprehension (e.g., McKeown, Beck, Omanson, & Perfetti, 1983; Ouellette, 2006). In other words, the faster the learners perceive the words, the more fluent readers they become (Yucel-Koc, 2015). These new words can be from different categories such as academic ones. As indicated by Nagy and Townsend (2012), academic vocabulary is also a crucial instrument for expanding academic achievement. It was also expressed that guidance of academic vocabulary with Latin root and morphologically complex structure using morphological investigation will improve word learning of English language students (Akbulut, 2017; Crosson, McKeown, Moore, & Ye, 2018). As per them, such guidance creates better results for learning academic words by reinforcing semantic and orthographic portrayals and influences lexical access. As indicated in Amirjalili & Jabbari (2018) less frequent words such as academic ones can be accessed by decoding and segmenting them into morphemes.

Considering the correlation between morphology and reading, some studies in literature demonstrate a proof of connection between them in the early school years (Carlisle, 1995; Carlisle & Nomanbhoy, 1993; Champion, 1997).These studies go further by investigating morphological awareness as an another conceivable semantic indicator of reading, i.e., the information of how complex words are comprised of littler units and the capacity to control those units to produce another word (Carlisle, 2000; Kuo & Anderson, 2006). Since the proof which is

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dependent on youthful readers recommend that they profit by a morphological learning methodology in reading (Casalis, Colé, & Sopo, 2004; in Italian, Burani, Marcolini., De Luca, & Zoccolotti 2008; Angelelli, Marinelli, & Burani, 2014), it seems significant to investigate the role of morphological instruction in reading improvement. Morphological instruction goes for improving morphological awareness or the familiarity with morphemic structures (Amirjalili & Jabbari, 2018). Scientists have stressed the requirement for morphological guidance in language education (Fracasso, Bangs, & Binder, 2016; McLeod & Apel, 2015). This is because of the way that, morphological guidance tends to sub-lexical highlights of a language, however this can impact proficiency aptitudes at lexical dimension, for example, word reading, spelling, and vocabulary and supra-lexical dimension, or reading comprehension (Brimo, 2016). In a longitudinal report examining the impacts of morphological awareness on five reading instruments, Kirby et al. (2012) demonstrate that morphological awareness plays an important role in reading and reading comprehension. This thought has additionally been confirmed in Spanish by Medina-Cárdenas and Rueda (2018) and in Chinese (e.g., Li, Anderson, Nagy, & Zhang, 2002; Liu & McBride-Chang, 2010; McBride-Chang, Shu, Zhou, Wat, & Wagner, 2003).

Metalinguistic Awareness

Morphological awareness is one of the subcategories of metalinguistic awareness (Yucel-Koc, 2015) which helps language learners in the learning process and underlies the connection between morphological awareness and education (Amirjalili & Jabbari, 2018). In other words; morphological awareness alludes to the metalinguistic competence in which words are comprised of individual units (i.e., morphemes) which can be examined and controlled in different ways (Carlisle, 1995; Derwing, Smith, & Wiebe, 1995). Inflection, derivation and compounding are three kinds of morphological tasks which permit the alteration of linguistic parts of the word (Vernice & Pagliarini, 2018). In this unit, *inflectional procedures* permit the alteration of linguistic parts of the words, such as number, possessive, and tense (e.g., toy-s, Mary's, walk-ed), *derivational tasks* include the production of new words (e.g., honest, dishonest; happy, happily), and *compounding* refers to generating new words by joining two lexical units together (e.g., moonlight). To get the needed vocabulary knowledge, which is mentioned above, metacognitive and metalinguistic factors assume an essential and a vital role and they help learners acquire needed vocabulary and reading comprehension.

In literature, there are some studies implying the improvement of metalinguistic awareness in bilingual children. For instance; Kuo, Ramirez, Marin, Kim, & Unal-Gezer, (2017) showed that L1 Spanish and English children who were tried out a double (English-Spanish) program demonstrated better morphological derivational awareness both in English and Spanish when they are compared to the other learners who were in general education. The authors emphasized that metalinguistic skills of bilingual children developed with a specific focus in derivational morphology. Another study which is conducted on English speaking children entering a French immersion program at school showed that after only two years of immersion education, children outperformed their peers in a series of metalinguistic tasks and they showed a metalinguistic awareness advantage which is associated with bilingual children (Bialystok, Peets & Moreno, 2014). Except from the metalinguistic studies conducted on bilingual children, what do we know about the development of metalinguistic ability in second language learners by the help of literacy? As Schmidt (2001) proposed, learning a second language is not possible without noticing which is a requirement for learning a language and indicated the importance of metalinguistic awareness. In second language environment, some researchers suggest that language instruction focusing on metalinguistic awareness can cause better language gains (Fotos, 1994; Swain, 1998) and increasing learner's awareness by the help of explicit teaching plays an important role in this environment (Schmidt, 1990). According to Nagy et al., (2006), there is a strong relationship between metalinguistic awareness and reading in which vocabulary growth plays a significant role.

Morphological and Metalinguistic Awareness in Turkish EFL Context

In literature, metalinguistic and morphological awareness are two important interrelated concepts. Competences such as reasoning skills, language skills, linguistic knowledge and word competence play an important role in second language acquisition. From this point of view, there are limited number of studies examining the effect of metalinguistic awareness on morphological awareness in the literature, while studies trying to increase awareness by providing long-term education with explicit learning method are insufficient. Atar (2018), one of the researchers working in the field of metalinguistic awareness in Turkish EFL context, aimed to test that Turkish L2 users judge the grammaticality of generic/habitual real conditions in Turkish. In his study, he used 20 grammaticality judgement tasks while investigating whether Turkish L2 users increased their metalinguistic awareness. According to the results of this comparative study conducted with 15 monolingual and 15 Turkish

L2 users, L2 learning has an effect on L1 of L2 users and L2 users have higher awareness of grammar (Atar, 2018). Besides, Aydın (2018) examined the relationship between metalinguistic knowledge and L2 achievement of Turkish EFL students. According to the results of the study using the two-part Metalinguistic Knowledge Test (MKT), L2 metalinguistic knowledge was found to be weak among intermediate-level Turkish EFL students. Therefore, some suggestions are made considering that metalinguistic knowledge is beneficial for second language acquisition (Aydın, 2018). Çandarlı (2018) who claims that metalinguistic knowledge has a significant effect on second language writing skills, examines the metalinguistic knowledge about the words and sentences used by the freshmen who are learning English as L2. According to the results of the study, the understanding of metalinguistic phrases tends to shift from low and medium level awareness to high level awareness. In addition, this study states that there is a moderate negative correlation between metalinguistic knowledge levels and frequency of lexical phrases in L2 authors' articles. Another study conducted in the context of metalinguistic awareness within Turkish EFL context is the study of Varışoğlu (2018). In this study, the researcher aimed to develop a useful, valid and reliable measurement tool to help prospective teachers determine Turkish metalinguistic awareness. The scale was designed as a 5-point Likert-type and was administered to a total of 480 students. The analysis shows that the scale can be used to determine Turkish metalinguistic awareness and is a valid and reliable measurement tool. According to this result, the same scale can be changed and adapted to be used in English learning as a second language.

In addition to metalinguistic awareness studies, only a limited number of studies in terms of morphological awareness are encountered in the literature. For instance; Aydın and Yıldırım (2017) are among the leading ones. Researchers have investigated the morphological awareness of 168 intermediate-level Turkish EFL students. The results of the study according to Morphological Awareness Test (MAT) which consists of two parts (Sentence Completion and Word Relation) indicate that intermediate-level Turkish EFL students have moderate to high morphological awareness, also perform better in word relation task than sentence completion task. In addition, they showed the highest performance in verb making suffixes. Another study conducted in the field of morphological awareness belongs to Akbulut (2017). The researcher aimed to investigate the relationship between morphological awareness and vocabulary and made an experimental study based on this aim. After 12 weeks of morphological instruction, she presented the Vocabulary Knowledge Test and Morphological Awareness Test consisting of two parts. The results of the study showed that the experimental group obtained higher levels of word recognition and knowledge than the control group. As can be seen in the Turkish literature, the studies investigating metalinguistic and morphological awareness together, performed explicit morphological treatment to improve this awareness and examining the effect of metalinguistic and morphological awareness on reading skills are insufficient. From this point of view, this study aims to contribute to the literature as a study aiming to increase the morphological and metalinguistic awareness after a longitudinal treatment period.

Present Study

The present study investigates the effect of morphological and metalinguistic awareness treatment on reading comprehension of second language learners. In this aspect, limited studies investigate Turkish EFL learners' morphological and metalinguistic awareness (Atar, 2018; Aydın, 2018; Aydın & Yıldırım, 2017; Çandarlı, 2018; Varışoğlu, 2018) after a longitudinal treatment period (Akbulut, 2017). Even in these limited studies considering morphological awareness and instruction, the effects of instruction on reading and reading comprehension have not been considered yet. It is also not known whether receiving instruction in these aspects can increase learners' reading skills in terms of accuracy. Based on these factors, this research aims to investigate two research questions as following:

Q1. Does morphological instruction improve EFL learners' morphological awareness in terms of morphological correction?
Q2. Does morphological instruction have an impact on the improvement of reading comprehension?

Method

Participants

Seventy-four participants (39 female, 35 male) from a state university in Turkey contributed to this study during 2 semesters (fall and spring) of their first year. When they entered their department (Translation and Interpreting) they were tested with Proficiency and Placement Test which was applied by Foreign Languages

School. In this exam, students who get 80 out of 100 score were considered as successful in the Proficiency Exam and passed to the department. At the beginning of the first semester, a total of 74 participants were administered the Oxford Quick Placement Test (OQPT), Nation's Vocabulary Knowledge Test (NVK), and a questionnaire which consists of 11 items. In the questionnaire, they were asked about the age, gender, country of birth, mother tongue and how many years they had learned English. There were also questions about the general individual assessment of basic English skills (reading, writing, listening, speaking and vocabulary) and how many hours per week they devote to reading activity. The purpose of using individual assessment in the questionnaire in addition to OQPT is to see whether the answers given by the participants to the questionnaire are reliable or whether they give realistic answers to OQPT and reach a valid result. From this point of view, the participants' personal score scale means, OQPT results and NVK results are consistent with each other. After the results have been taken, simple random sampling in which "every member of the participants has an equal and independent chance of being selected for the research" (Mackey & Gass, 2015:120) has been used.

Descriptive statistics of the participants obtained from questionnaire are given in Table 1. According to the results, the native language of all participants is Turkish and all of them learn English for over 6-7 years. Their ages are between 18 and 21 (M=19). The mean score of their reading (M=6,13 out of 10), writing (M=5,95 out of 10) and vocabulary knowledge (M= 5,37 out of 10) skills is better than speaking (M= 3,82 out of 10) and listening skills (M=4,32 out of 10). After the inquiries, the mean value was determined by comparing the results of OQPT and NVK and the participants were divided into experimental (N=38) and control group (N=36) in a balanced and random way according to their level. The distribution of the groups was based on the test results and levels of the participants. Of the 41 students in the experimental group, the 3 were unable to implement the treatment and so their data were not used in the final analyses; the 2 from the control group were non-native speakers of Turkish and their results were excluded from the analyses.

Table 1. Descriptive Statistics of Participants

	N	Minimum	Maximum	Mean	Std. Error	SD
Age	74	18,00	21,00	19,3784	,12426	1,06890
Years of L2 learning	74	6,00	15,00	9,2838	,19482	1,67594
Reading	74	1,00	9,00	6,1351	,23036	1,98159
Writing	74	1,00	9,00	5,9595	,23205	1,99616
Speaking	74	1,00	8,00	3,8243	,19656	1,69090
Listening	74	1,00	8,00	4,3243	,20822	1,79121
Vocabulary Knowledge	74	1,00	8,00	5,3784	,20245	1,74154
Hours of Reading	74	1,00	5,00	2,3378	,11904	1,02405
Oxford	74	39,00	58,00	48,7703	,54169	4,65979
Nation's Vocab Know.	74	40,00	58,00	48,5270	,54260	4,66765
Valid N (listwise)	74					

Instruments

The main words used in the treatment and instruments were selected from Longman Communication 3000 list which contains 3000 most frequent words in spoken and written English according to the statistical analysis of the 390 million words contained in the Longman Corpus Network (https://www.lextutor.ca/freq/lists_download/longman_3000_list.pdf). Since the main aim of the study is to create awareness in the relationship of the root with a specific suffixes and prefixes, high-frequent base words were selected to allow the learners to focus on morphology itself. In this aspect, the Longman Communication 3000 represents the core of English language and shows students important words to learn and study for effective communication in spoken or written.

The measures used in the study consist of Morphological Correction Test (MCT) and Reading Comprehension Test (RCT). The main reason for the use of MCT is to see whether the words that contain prefixes, suffixes and roots in the content will form an awareness of the students in terms of morphology. RCT, on the other hand, is to try to understand how the developing metalinguistic and morphological awareness of the students improves their reading comprehension and inference skills.

Morphological Correction Test (MCT)

Morphological Correction Test was used in this study to decide whether explicit morphological treatment and increasing metalinguistic awareness help language learners acquire larger vocabulary knowledge or not. From this point, in this test, students were exposed to a set of sentences which comprise morphologically correct or incorrect words and were expected to recognize the correct form of each underlined word given. The students were asked to state the correct answer expressing YES if the underlined word in the sample sentence given is correct or NO if the word is not correct. There were 30 items on this test and each corresponding to the suffixes and prefixes used in the test was taught during the instruction (see Appendix A.). The examples of this test are as the following:

> He was acting in a very <u>childy</u> way. (child) YES/NO
> I couldn't find any <u>weakness</u> in his theory (weak) YES/NO
> The film was terrible, I felt really <u>boring</u>. (bore) YES/NO

Once the test was adapted and made ready, a Ph.D in linguistics reviewed the tests and some parts were revised. After the pilot study which was presented to a group of students (N=22) in the same department but different from the research group, the validity and reliability were calculated by SPSS. Cronbach's alpha, Kuder Richardson 20 (KR20) and Hoyt's variance analysis are widely used methods for internal consistency reliability estimation. The Kuder-Richardson 20 is only suitable for dichotomously [0,1] measured substances. Cronbach's alpha can be used with both dichotomously [0,1] measured substances and weighted [1,2,3,4,5] measured substances. The Kuder-Richardson 20, Cronbach's alpha and Hoyt's variance analysis formulas yield the same results when all items are measured with dichotomously [0,1] (Bademci, 2011:173). Therefore, in this study, internal consistency analysis of KR20 was performed and Cronbach Alpha coefficient was determined. As shown in Table 2., the MCT has high degree of consistency according to Cronbach alpha results (.895) and was assumed to be reliable.

Table 2. Cronbach's Alpha for MCT

Case Processing Summary			
		N	%
Cases	Valid	22	100,0
	Excluded[a]	0	,0
	Total	22	100,0
Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items
,899	,895		30

Reading Comprehension Test (RCT)

Four reading passages were adapted from Bian's (2017) dissertation for Reading Comprehension Test and prepared according to the Turkish EFL learners' proficiency. In the original form, there are 3 passages and they have less than 20 questions. Following the completion of the pilot study, the participants' views on reading passages were taken into consideration and considered. After the study, the participants stated that the reading passages were so long, therefore they were distracted while reading and they could not focus on the passages for a long time. Following these feedbacks, the views were evaluated and the number of words of the reading passages were reduced; furthermore, one of the reading passages was divided into two and the last shape was given. Finally, 5 different questions for each reading passage were prepared. These questions consist of comprehension questions, inferencing and guessing vocabulary meaning from the context as in the example (see Appendix B.).

> (e.g. Rachel Louise Carson received her degrees in marine biology. She is regarded as the public figure who <u>launched</u> the environmentalist movement…
> 1. Which one is the closest in meaning to the underlined word "launched"?
> a. wrote about   b. reorganized   c. began   d. researched

First, the students were asked to read and scan each reading passage and then they were instructed to answer the questions given in the hand-out. For this test, Cronbach's alpha was .78 according to the pilot study and the results are as seen in Table 3.

Table 3. Cronbach's Alpha for RCT

Case Processing Summary			
		N	%
Cases	Valid	22	100,0
	Excluded[a]	0	,0
	Total	22	100,0
Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items
,779	,780		20

Procedure and Design

This research was an experimental study including pre-test and post-test measures of experimental and control groups. The students in the experimental group received explicit instruction in aspects of derivational and inflectional morphology and parts of speech. Both (experimental and control) groups met with the researcher as the teacher of classes once a week for 200 mins. The study took 26 weeks, but the instruction period was 22 weeks. Pre and post-tests were administered in the first and the last week of the course. MCT was a computerized task and each student was tested individually in laboratory. All sentence patterns of each item in Task 1 (MCT) were presented with a white background at a size about 400X564 pixels. Superlab software program was used to present stimuli and collect the data. Before the experiment, pre-experimental trials were presented to the participants and oral and written instructions were given. After the instructions, participants completed the MCT task marking 'Yes' or 'No'. Each answer was recorded by the help of SV-1 Voice Key and Response Pad. The first trial started with a fixation cross on the screen centre for 250 ms. When the participants heard the beep sound on this fixation time, they understood that the experiment was about to start. Then a blank screen was presented for 500 ms., another trial appeared on the screen. The participants completed 3 practice trials and 30 trials for MCT. The procedure was as follows: As for *Task 1 (MCT),* the practice trials were presented before the experiment and they were trained to read the sentences (each has 8 words) and recognize whether the underlined word in each sentence correct or incorrect. Following the practice trials, the experimental period started with need instructions again. They were told to press as soon as possible a button on the keyboard marked with "Yes" or "No" to provide their answers. Regarding *Task 2 (RCT)* was a comprehension task and it tackled the competence in reading related to morphological awareness. The students had to read the passages and answer the following questions given after the texts. Accuracy scores for each question and each passage were obtained from the students.

Treatment

In this study, experimental group received morphological instruction (for 22 weeks) based on affixes (prefixes and suffixes) and roots. The basic list of affixes and root was created and adapted by Wilde (2006). In the Wilde's "Building Vocabulary: Prefixes, Roots and Suffixes List", there are 32 prefixes, 23 suffixes and 27 roots and it was used in the treatment period since they all include Longman Communication 3000 list. This list includes 3000 most frequent words in spoken and written English based on Longman Corpus Network as mentioned before. The words with different morphological structure were presented in written with different texts as much as in spoken with different videos and short films. Afterward, the instruction about parts of speech in English was given to help them identify the forms of vocabulary items. All students in experimental group received explicit and direct instruction in morphological analysis. Table 1. shows the steps of instruction plan as follows:

Table 4. Morphological Instruction Plan

Week	Experimental Group Instruction Period
Fall Semester	
Week 1-2	Pre-test for MCT and RCT
Week 3-4-5 (12hours)	Teaching point: 5 prefixes, 4 roots, 4 suffixes with their meanings and exercises Teaching steps: 1. presenting the base and its meaning; the definition of the base was taught directly by the teacher in print and power-point presentation visually, 2. introducing prefixes and exercises about adding prefixes to related roots, (e.g. dis-honest) 3. teaching the meaning of each word giving examples in non-native language

	and explaining the parts of speech of each word when they are added prefixes, 4. introducing suffixes and exercises about adding suffixes to related roots, (e.g. skill-ful) 5. teaching the meaning of each word giving examples in non-native language and explaining the parts of speech of each word when they are added suffixes, (e.g. popular -adj.; popularity- n.), 6. combining both prefixes and suffixes to the roots and explaining the parts of speech of each word based on the suffix or prefix (e.g.im-moral-ity, immoral-adj; immorality-n.)
Week 6-8-9 (12 hours)	Teaching point: 5 prefixes, 5 roots, 4 suffixes with their meanings and exercises Teaching steps are the same as the first 3 weeks and continued for the following 3 weeks as well as spring semester) (The seventh week for each semester is omitted since this week, midterm exam is performed in all departments at the university.)
Week 10-11-12 (12 hours)	Teaching point: 6 prefixes, 4 roots, 4 suffixes with their meanings and exercises
Week 13-14 (8 hours)	Revision
Spring Semester	
Week 1-2-3 (12hours)	Teaching point: 5 prefixes, 5 roots, 4 suffixes with their meanings and exercises
Week 4-5-6 (12hours)	Teaching point: 5 prefixes, 5 roots, 4 suffixes with their meanings and exercises
Week 8-9-10 (12hours)	Teaching point: 6 prefixes, 4 roots, 3 suffixes with their meanings and exercises
Week 11-12 (8 hours)	Revision and Follow-up Activities
Week 13-14	Post-test for MCT and RCT

Data Analysis

The results of the study were analysed with independent sample t-test from the parametric test group. The reason for applying T-Test was that all participants' responses were included in the analysis and the normal distribution requirement was sought. Since t-test can be used when a researcher wants to determine "if the means of two groups are significantly different from one another" (Mackey & Gass, 2005: 272) as in the present study, it was seen as appropriate when comparing two groups (experimental and control). SPSS (version 25) software program was used in the analysis of the study. Outliers were excluded when they are shorter than 1000 ms. and slower than 8000 ms. for MCT. The mean RTs were calculated, and morphological instruction effect on EFL learners' morphological and metalinguistic awareness was investigated.

In addition to T-test, both research questions were re-analysed with ANCOVA (Analysis of Covariance) to make the study results more reliable. In a study, covariance analysis can be defined as a technique that enables the statistical control of another variable or variables named as a common variable, whose effect is related to the dependent variable other than the tested independent variable. The covariance analysis is generally used to test whether there is a significant difference between the pre-test and post-test control group patterns and the post-test measurements of the experimental and control groups. Here, pre-test measurements are defined as common variables (Büyüköztürk, 1998). The logic of covariance analysis is to extract the changes from the dependent variable, the common variable, and then find out whether the change in the dependent variable is caused by the independent variable. From this perspective, ANCOVA is the most common way to control a variable in analysis, ie to eliminate its effect (Punch, 2005) and considered ideal and powerful statistic for experimental studies (Mackey & Gass, 2005). In this study, it was used to examine the effects of morphological treatment on post-test scores (the dependent variable) of morphological correction and reading comprehension ability (i.e., the main factor with two levels: experimental and control group). All final models are available at https://drive.google.com/drive/folders/1ofdziYeepP7s0oZewdpK823vVihbkVi9?usp=sharing.

Results

Morphological Correction Test (MCT)

The first research question concerned with whether morphological instruction improve EFL learners' morphological awareness in terms of MCT. In order to analyse the effect of instruction, the RT performance scores of pre-tests and post-tests of both groups were analysed with ANCOVA and also Independent sample t-test procedure. Descriptive statistics (mean and SDs) for all variables included in the study and independent sample t-test results at two different times (pre-test and post-test) and two treatments (experimental/control) are reported in Table 2. Independent sample t-test results demonstrated that before the treatment period, there were

no significant differences between scores of experimental and control groups [MCT (t (72) =-1.468, p=.147)]. ANCOVA of the MCT scores when the covariate is not included revealed no significant differences between groups, [MCT (F (1, 72) = 2.154, p=.147)]. Similarly, when checking out the homogeneity of regression, there is no significant effect between groups (Group*MCT PRE, F (1,70) = .147, p= .703)]. It is clear from the significance value that there are no differences in Pre-Testing of all tasks-between the experimental and control group.

Independent sample t-tests of post-test scores indicated a statistically significant difference between the experimental and control groups (MCT, (t (72) =-6.241, p=.000)]. When pre-test scores of all tasks are included in the model as a covariate, post-test scores of all tasks showed that the experimental group significantly outperformed the control group at the time of post-testing, [(MCT, F (1, 71) =37.200, p=.000)]. The partial eta-squared value was .344 for MCT indicating a large effect size. The results show that the experimental group outperformed the control group after treatment.

Table 5. Descriptive statistics and Independent Sample T-Test Results

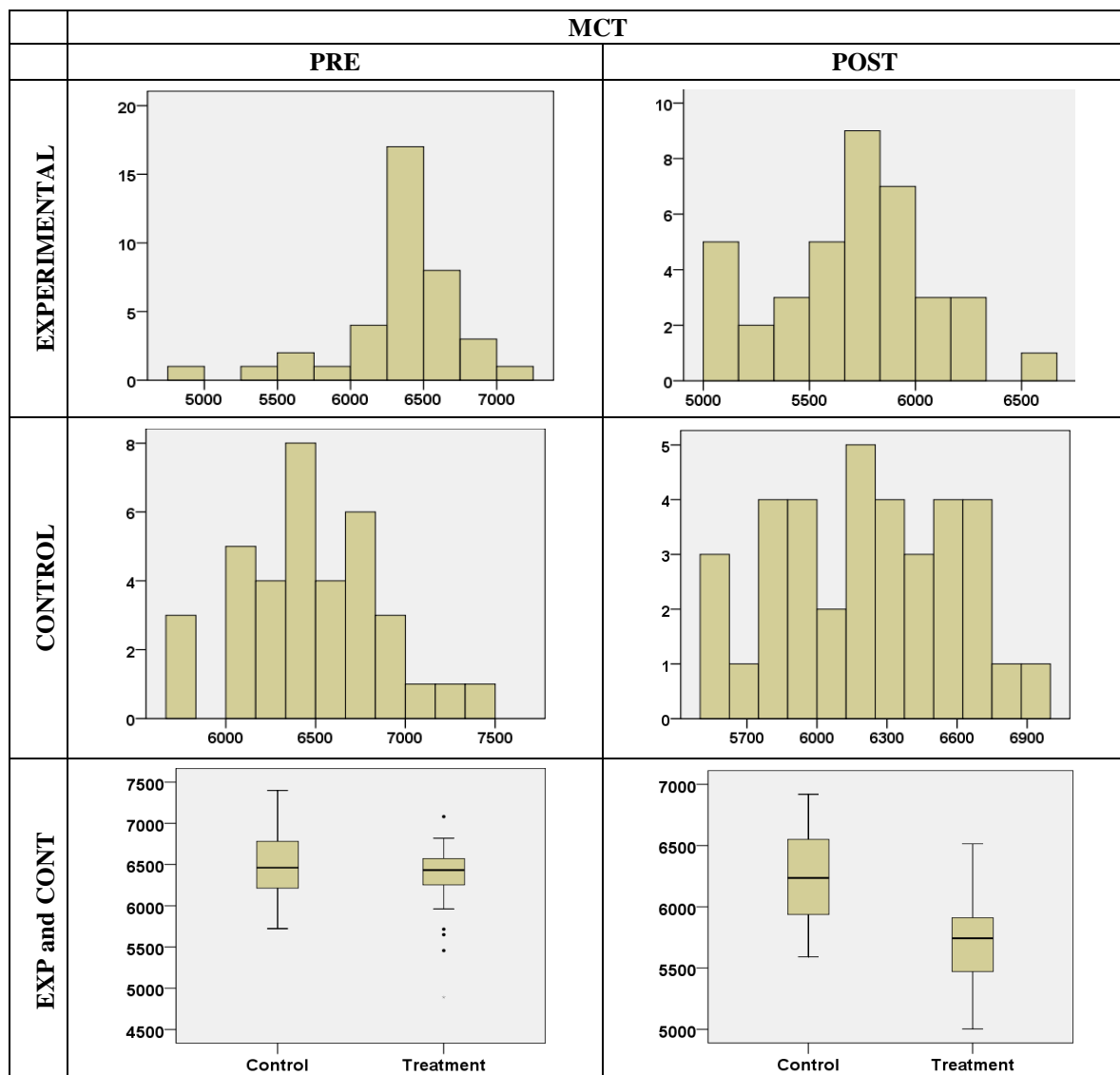|	Time	Treatment	N	Mean	SD	Min.	Max.	t (72)	p
MCT	Pre-test	Experimental	38	6352.802	406.067	4891.96	7082.12	-1.468	.147
		Control	36	6491.285	405.257	5723.10	7400.91		
	Post-test	Experimental	38	5695.902	361.312	5002.36	6514.27	-6 .241	.000
		Control	36	6229.774	374.482	5592.92	6917.85		

Figure 1. Experimental and Control Group's RTs on MCT

The histograms of pre-test and post-test scores showing the difference between experimental and control groups were displayed in Figure 1 comparatively. As seen in this figure, there is no significant difference between groups before the treatment. After the treatment, the experimental group had greater improvements compared to control group. Concerning the between-group factors, it shows the improvement of experimental group after the treatment. The RT means of experimental group are higher than the control groups' RT means.

Reading Comprehension Test (RCT)

The second research question of this study is related to the relationship between MA instruction and reading comprehension ability. In order to find out whether the MA treatment promotes reading comprehension ability, pre-test and post-test results of both groups were analysed.

Independent sample t-test scores, the mean and SDs for RCT at two different times (pre-test/post-test) and two treatments (experimental/control) are displayed in Table 3. As demonstrated in table, before the treatment, there was no significant difference between the groups [(t (72) =-.662, p=.51)]. ANCOVA of the RCT scores when the covariate is not included revealed no significant differences between groups, [F (1, 72) = .438, p=.510]. Similarly, when checking out the homogeneity of regression, there is no significant effect between groups [(Group*RCT PRE), F (1, 70) = 2.045, p= .157]. It is clear from the significance value that there are no differences in RCT-Pre-Testing between the experimental and control group.

Independent sample t-tests scores of RCT post-test indicated a statistically significant difference between the experimental and control groups [(t (72) =5.059, p=.000)]. When RCT pre-test score is included in the model as a covariate, RCT post-test scores showed that the experimental group significantly outperformed the control group at the time of post-testing, [F (1, 71) =29.449, p=.000]. The partial eta-squared value was .293 indicating a large effect size. The results show that the experimental group outperformed the control group after treatment.

Table 6. Descriptive statistics and Independent Sample T-Test Results

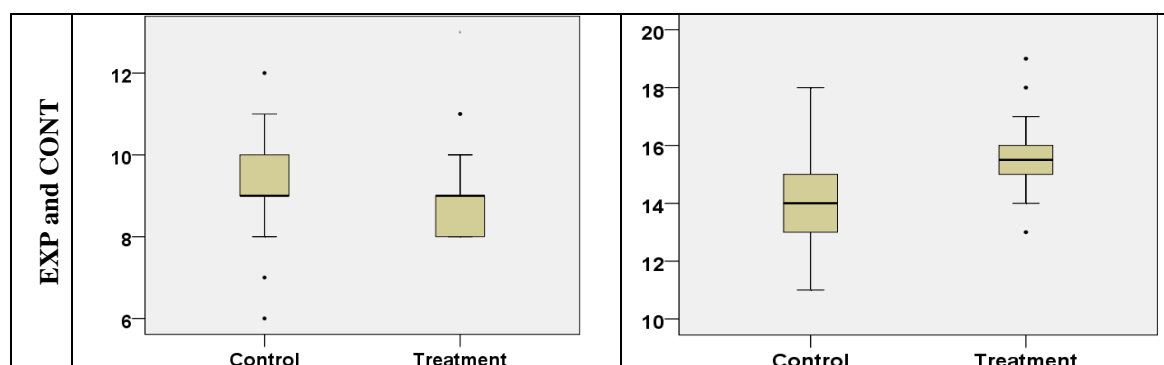|	Time	Treatment	N	Mean	SD	Min.	Max.	*t* (72)	*p*
RCT	Pre-test	Experimental	38	8.947	1.03838	8.00	13.00	-.662	.510
		Control	36	9.111	1.08963	6.00	12.00		
	Post-test	Experimental	38	15.552	1.26699	13.00	19.00	5.059	.000
		Control	36	14.000	1.37321	11.00	18.00		
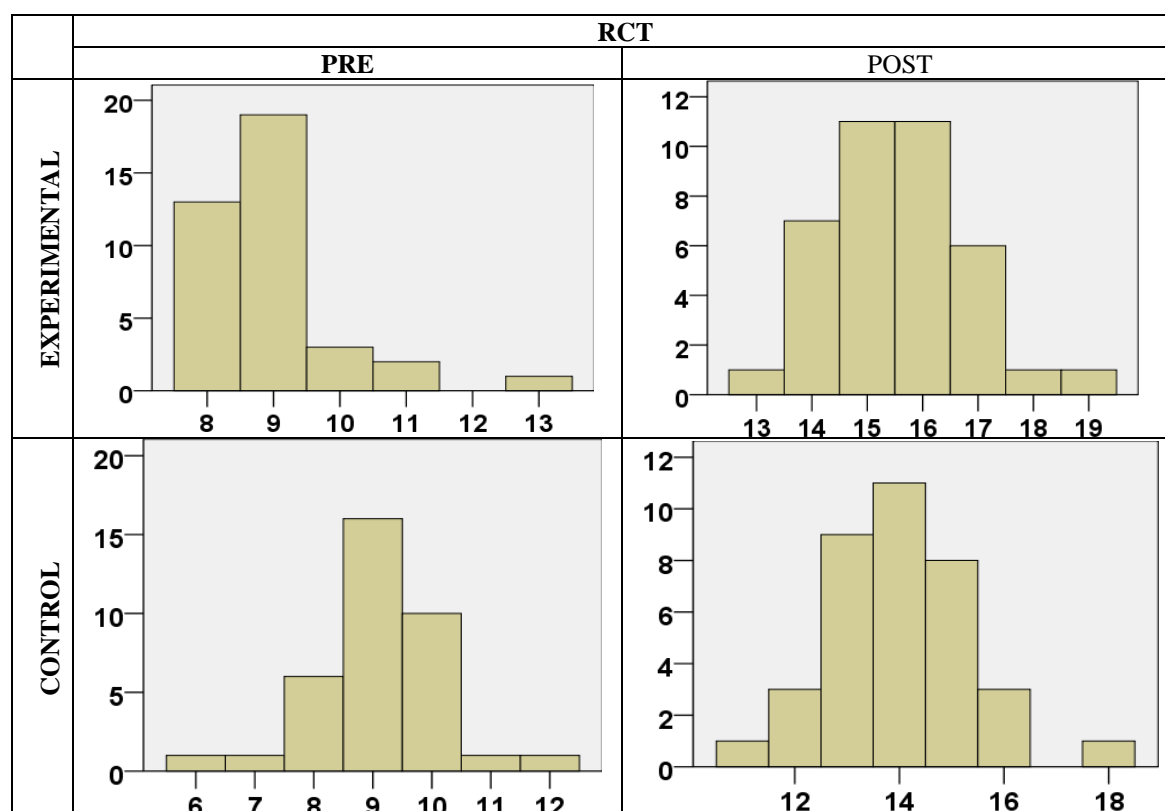
Figure 2. Experimental and Control Group's RTs on RCT

Figure 2 demonstrates the difference between experimental and control groups' performances comparatively. As seen in these figures, while there is no significant difference between groups before the treatment; after the treatment, the experimental group had greater improvements than control group in terms of accuracy.

Discussion and Conclusion

The purpose of the study was to examine whether or not morphological instruction plays an important role in explaining and understanding the difficulties and boundaries second language learners have while they are learning lexis in a new language and improving reading ability in this language. For this reason, the current study attempted to investigate the effect of morphological instruction on morphological awareness and reading comprehension. In total, 22-week teacher implemented intervention and treatment had positive effects on these two aspects mentioned when compared to the control group which took regular instruction during this period. Gaining further insight into this awareness will help us understand the mechanisms that influence reading words in another language. Specifically, this knowledge can help us understand and analyse the reading difficulties based on lexis that a large percentage of university students face and offer lots of possibilities to make the best decisions in the interventions programmed to foster their progress in second language vocabulary knowledge and reading. In other words, the main concern was to examine to what extent the morphological instruction affects learners' awareness on morphology and explains their difficulty in reading texts.

The first research question analysed the impact of morphological instruction on morphological awareness. According to the results, experimental groups outperformed the control groups in terms of RT means and correction performance. Another important result was that they benefited from the instruction period in a positive way. They need explicit teaching of morphological rules to improve their metalinguistic and morphological awareness. When considering *morphological correction task*, evidence from experimental groups who have decreasing level of response times showed that morphological instruction benefited in a higher level than control group. As Bowers, Kirby and Deacon (2010) indicated it is possible to say that morphological awareness which is gained by the support of explicit instruction contributes many students who are in typical instruction and fail in it. To sum up, the improvements of treatment group were significantly better than those of control groups.

Concerning the second research question, the general results of the study show that experimental groups significantly outperformed the control groups in reading comprehension as well. It also demonstrated that the explicit morphological instruction and teaching parts of speech had positive effects on reading comprehension ability. Most studies looked at the relationship between morphological awareness and reading comprehension with different participant groups but in a similar way to this study (e.g Brimo, 2016; Deacon & Kirby, 2004; Mahony, 1994; Kirby et al., 2012; Ouellette, 2006; Tyler & Nagy, 1990). The difference from the previous studies is that in this study, an effort was made to determine whether morphological treatment process was used to improve the reading comprehension of Turkish EFL learners. The reading performance of students on four different reading passages was used to see whether the experimental group outperform the control group in terms of the accuracy of comprehension or inferencing questions. Based on accuracy, the result was that experimental group completed the tasks more accurately than the other group. Thus, the comparable finding was that performance of experimental group after treatment significantly related to awareness of morphological structures. In terms of the relationship between morphological awareness and reading comprehension, both groups performed well; however, experimental group performed statistically significant on reading comprehension more than control group. Thus, their reading appears to have been affected by the nature of

morphological treatment and awareness improvement. In terms of reading comprehension, some studies (Levesque, Keiffer & Deacon, 2017; Mahony, 1994; McBride-Chang et al., 2003; Tong, Deacon, Kirby, Cain & Parrila, 2011; Treiman & Cassar, 1996) have shown some significant correlations between the improvement of sensation to morphology and reading achievement on different participants group. The results of the present study showed that awareness of morphology and reading vocabulary contributed significantly to comprehension at the text levels. The interrelation of different aspects or morphological awareness might be expected for university level students since they had more exposure to morphologically complex vocabulary items and more opportunity to learn to use these words in reading or writing skills. However, it is still surprising that, explicit morphological instruction improves their abilities greater than the others who does not take any explicit learning process. In general, when the results of the study are examined, it can be stated that the findings obtained that the metalinguistic and morphological awareness in Turkish EFL context improve reading and vocabulary skills after the training are similar to those obtained by Akbulut (2017). In terms of education, both studies can conclude that explicit teaching period has achieved a successful result on students. In terms of the development of metalinguistic awareness, the higher level of awareness of Turkish L2 learners shows the importance of second language acquisition, as in the case of Atar (2018). On the other hand, when the term morphological awareness is taken into consideration, the results of the study indicate that Turkish EFL students' performance on word recognition is successful and they become familiar with English word forms. Amirjalili and Jabbari (2018), who examined the results of the measurement tools applied after a long-term training on morphological awareness with participants who are learning English as a second language, stated that the participants showed a higher achievement in reading comprehension skills and these findings are in line with the findings of this study. These findings are thought to be beneficial for EFL instructors to emphasize that increasing second language learners' morphological and metalinguistic awareness skills may increase their reading comprehension skills as well. In particular, instructors should present the morphological aspects of the materials presented in the classroom in the second language vocabulary and reading classes and should not ignore the need to prepare materials in this direction.

All in all, this study has revealed some important improvements in terms of vocabulary and reading comprehension for Turkish EFL students and also brought some limitations and weaknesses with it. The real problem is that this study is limited to only one public university. Since the curriculum and teaching techniques of each university and even the instructor will be different, generalizing this study with all universities may be a problem. On the other hand, the limited educational process is another limitation of the study. Finally, in future studies, the measurement tools can be expanded and distributed to a few weeks to be completed at the end of the semester. In addition, the lack of follow-up measurement and the inability to measure the persistence of reading comprehension and awareness skills can be considered as another weakness or limitation of the study.

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Appendix A. Morphological Correction Test (MCT)
Read the sentences and decide whether the underlined word is in the correct form of the words given in brackets. If it is correct, push the button YES, if it is not correct, push the button NO.
1. There was an enormous <u>expansion</u> in aviation. (expand) YES/NO
2. Economists are concerned that development should be <u>sustainable</u> (sustain) YES/NO
3. There was no <u>perceptional</u> change in the patient's condition. (perceive) YES/NO
4. The group's aims include the <u>elimination</u> of poverty. (eliminate) YES/NO
5. He was sitting <u>comfortably</u> in his seat on the train. (comfort) YES/NO
6. There was a <u>greeny</u> light coming from the window. (green) YES/NO
7. He was acting in a very <u>childy</u> way. (child) YES/NO
8. Some of the shanty towns are dreadfully <u>crowded</u>. (crowd) YES/NO
9. The team were able to win the <u>champion</u>. (champion) YES/NO
10. The analysis demanded an <u>exceeding</u> amount of computer time. (exceed) YES/NO
11. The course requires a <u>reasonable</u> amount of computer knowledge. (reason) YES/NO
12. I couldn't find any <u>weakness</u> in his theory. (weak) YES/NO
13. He needed to <u>regulate</u> the temperature for health. (regular) YES/NO
14. There was a three-hour <u>stop</u> because of strike. (stop) YES/NO
15. She looked at her <u>reflected</u> in the mirror. (reflect) YES/NO
16. He decided to study <u>journalism</u> at university. (journal) YES/NO
17. The film was <u>surprisingly</u> good, we enjoyed it. (surprise) YES/NO
18. I don't like him since he's so <u>unsatisfied</u>. (satisfy) YES/NO
19. The new company has over five hundred <u>employees</u>. (employ) YES/NO
20. The new manager was very efficient and <u>businessman</u>. (business) YES/NO
21. The rate of <u>employment</u> in Turkey has been rising. (employ) YES/NO
22. She looked at him <u>happily</u> and started to cry. (happy) YES/NO
23. The party was <u>disastrous</u>, everything went wrong. (disaster) YES/NO
24. The film was so <u>boring</u> that we left it. (bore) YES/NO
25. The film was terrible, I felt really <u>boring</u>. (bore) YES/NO
26. Have you seen that new <u>comedian</u>? He's funny. (comedy) YES/NO
27. The event was totally <u>organised</u>. It was terrible. (organise) YES/NO
28. I arrived late for work because I was <u>slept</u>. (sleep) YES/NO
29. There is a small <u>booking</u> explaining the holiday. (book) YES/NO
30. He was <u>compromised</u>. He wouldn't change his mind. (compromise) YES/NO

Appendix B. Reading Comprehension Test (RCT)
Passage 1.
 (1) Rachel Louise Carson received her degrees in marine biology from the Pennsylvania College for Women and in zoology from the Johns Hopkins University. Her true calling turned out to be much broader in range than the academic study of wildlife, however. As Carson's career as a scientific writer progressed, she became interested in the effects of artificial chemicals on the natural environment. She is thus regarded as the public figure who <u>launched</u> the environmentalist movement.
(2) Upon enrolling in college, Carson had initially intended to major in English and become a journalist or novelist. Her attentiveness to presentation allowed her to convey even rather dry facts in an evocative prose style that held the attention of the general reader. Wedded to her extensive academic training in biology, Carson's talent for expressive writing positioned her ideally to bring scientific findings about ecology to a mass audience. She published a famous trilogy about the delicate and complex ecology of the sea, beginning with Under the Sea-Wind. That first volume took a largescale approach, describing the living systems of the ocean in everyday, easily understood terms. Under the Sea-Wind was only a moderate commercial success, but it, along with Carson's writings for the United States Fish and Wildlife Service, set the stage for her second volume, published ten years after the first. In it, Carson examined more explicitly than before the effects of human action on the creatures of the ocean. The last book in the trilogy was The Edge of the Sea, in which Carson trained her writerly and scientific gaze on the shoreline of the East Coast to examine the endangered organisms that populated it.
(3) Carson alleged that the regulations governing use of these chemicals were inadequate, though her positions were not as extreme as they are sometimes now characterized. She did not support the outright banning of pesticides. _____, she objected to "indiscriminate" use, which is to say, use without any thought for caution and moderation. Eventually, Carson's views were taken seriously at the highest levels of government. President John F. Kennedy's Science Advisory Committee solicited her advice on how to improve rules about pesticide use. She also testified before Congress. Through her influence, she assisted in bringing about far stricture

controls on toxic chemicals such as DDT, which deteriorates slowly and thus remains in soil and groundwater for very long periods of time.

1. The underlined word "launched" in the paragraph 1 is closest in meaning to
A. wrote about   B. reorganized   C. began   D. researched

2. It can be inferred from the passage that DDT is especially dangerous because
A. it is most commonly used pesticide   B. its taste attracts birds
C. It does not disappear quickly   D. It takes a long time to kill insects

3. What did Rachel identify in her first volume?
A. Living systems of the ocean   B. Organisms in the sea
C. Shoreline of the East coast   D. Pesticide use in nature

4. Which word fits in the blank in paragraph 3.?
A. Besides   B. Finally   C. Rather   D. Likewise

5. The best title of the passage is
A. Politics of Pollution   B. Feminism of Science
C. The Ocean in Danger   D. The First Environmentalist: Rachel Carson

Passage 2

(1) The flag, the most common symbol of national identity in the modern world, is also one of the most ancient. The traditional flag of fabric is still used to mark buildings, ships, and diplomatic caravans by national affiliation, but its visual design makes it adaptable for other roles as well. Most flags have a compact, rectangular shape and distinct visual symbolism. Their strong colours and geometric patterns are usually instantly recognizable even if miniaturized to less than a square centimetre. Images of flags can thus serve as identifying icons on airliners, television broadcasts, and computer displays.

(2) Despite its simplicity, the national flag as we know it today is in no way a primitive artefact. It is, rather, the product of millennia of development in many corners of the globe. Historians believe it had two major ancestors, of which the earlier served to indicate wind direction. Early human societies used very fragile shelters and boats. Their food sources were similarly vulnerable to disruption. Even after various grains had been domesticated, people needed cooperation from the elements to assure good harvest. For all these reasons, they feared and depended on the power of the wind, which could bring warmth from one direction and cold from another.

(3) In Europe, the Chinese-derived flag met up with the modern flag's second ancestor, the heraldic crest. The flags used in Asia may have been differentiated by colour, but they rarely featured emblems or pictures. European nobles of the medieval period had, _____, developed a system of crests (symbols or insignias specific to particular families) that were commonly mounted on hard surfaces; shields to be used in battle often displayed them especially prominently.

(4) The production of these crests on flags permitted them to be used as heralds, meaning that they functioned as visual announcements that a member of an important household was present. While crests began to appear on flags as well as shields, the number of prominent families was also increasing. They required an ever-greater number of combinations of stripes, crosses, flowers, and mythical animals to distinguish themselves. These survived as the basic components of flag design when small regional kingdoms were later combined into larger nation-states. They remain such for many European countries today. (374)

6. The underlined word "miniaturized" in paragraph 1 is closest in meaning to
A. publicized   B. coloured   C. made brighter   D. made smaller

7. The underlined word "they" in paragraph 2 refers to
A. grains   B. people   C. elements   D. harvests

8. Which word fits in the blank in paragraph 3?
A. however   B. nevertheless   C. furthermore   D. similarly

9. According to paragraph 4 of the passage, the number of flag designs increased because
A. fewer shields were being made for battle   B. nation-states were becoming larger
C. artists had greater freedom in creating flags   D. more families wanted their own symbols

10. The best title of the passage is
A. National Identity Symbol: The Flag   B. The Flag and Its Alteration
C. The Usage of National Flag   D. The Production of Flags

Passage 3.

Part 1.

(1) Although it seems like the proliferation of spam—junk E-mails sent unsolicited to millions of people each day—is a recent problem, spam has been around as long as the internet has. In fact, the first documented case of spam occurred in 1978, when a computer company sent out 400 E-mails via the Arpanet, the precursor to the modern Internet. Now, spam E-mails account for more than two-thirds of all the E-mail sent over the internet, and for some unlucky users, spam makes up 80 percent of the messages they receive. And, despite technological

innovations such as spam filters and even new legislation designed to combat spam, the problem will not go away easily.

(2) The reason spammers (the people and businesses that spread spam) are difficult to stop is that spam is so cost-effective. It costs a spammer roughly one hundredth of a cent to send spam, which means that a spammer can still make a profit even with an abysmally low response rate, as low as one sale per 100,000 E-mails sent. This low rate gives spammers a tremendous incentive to continue sending out millions and millions of E-mails, even if the average person never purchases anything from them. With so much at stake, spammers have gone to great lengths to avoid or defeat spam blockers and fillers.

(3) Most spam filters rely on a fairly primitive "fingerprinting" system. In this system, a program analyses several typical spam messages and identifies common features in them. Any arriving E-mails that match these features are deleted. But the fingerprinting defence proves quite easy for spammers to defeat. To confuse the program, a spammer simply must include a series of random characters or numbers. These additions to the spam message change its "fingerprint" and thus allow the spam to escape detection. And when programmers modify the fingerprint software to look for random strings of letters, spammers respond by including non-random content, such as sports scores or stock prices, which again defeats the system. (333)

11. According to the first paragraph, what is the main problem of today's technological world?
A. people face unwanted mails
B. people come across with spam messages if internet has
C. people waste their time on the internet
D. people are more unsocial than before

12. Why are the spammers encouraged to send spams?
A. they earn money and make a profit even from a low rate of spams
B. they like doing illegal things on the internet
C. they enjoy their time sending spams via e-mails
D. they are eager to prepare new programs including spams

13. What is the fingerprinting system?
A. a program analysing fingerprints of spammers
B. a system identifying features of spams
C. a program defining spam messages and their features
D. a system describing spam threats

14. The underlined phrase "The program" in paragraph 3 refers to
A. spam messages
B. random characters and numbers
C. a type of spam filter
D. common features

15. The best title for this passage (Part 1.) is
A. Internet Security
B. Solutions to Spam
C. Why is Spam Profitable
D. The Problems of Spam

Part 2.

(1) Understanding that spam is a very dangerous and harmful for every budget, software developers are trying to find new solutions for spam. Unlike from fingerprinting systems, another possible solution takes advantage of a computer's limited learning abilities. So-called "smart filters" use complex algorithms, which allow them to recognize new versions of spam messages. These filters may be initially fooled by random characters or bogus content, but they soon learn to identify these features. _____, spammers have learned how to avoid these smart filters as well. The smart filter functions by looking for words and phrases that are normally used in a spam message, but spammers have learned to hide words and phrases by using numbers or other characters to stand in for letters. For example, the word "money" might appear with a zero replacing the letter "o." Alternatively, spammers send their messages in the form of a picture or graphic, which cannot be scanned in the same way a message can.

(2) Another spam stopper uses a proof system. With this system, a user must first verify that he or she is a person before the E-mail is sent by solving a simple puzzle or answering a question. This system prevents automated spam systems from sending out mass E-mails since computers are often unable to pass the verification tests. With a proof system in place, spam no longer becomes cost-effective because each E-mail would have to be individually verified by a person before it could be sent. So far, spammers have been unable to defeat proof systems, but most E-mail users are reluctant to adopt these systems because they make sending E-mails inconvenient. A similar problem prevents another effective spam blocker from widespread use. This system involves charging a minimal fee for each E-mail sent. The fee, set at one penny, would appear as an electronic check included with the E-mail. Users can choose to waive the fee if the E-mail is from a legitimate source; however, users can collect the fee from a spammer. A fee system would most likely eliminate a great deal of spam, but unfortunately many users find such a system too intrusive and inconvenient.

(3) In some ways, the battles being fought over intrusive E-mails are very much an arms race. Computer engineers will continue to devise new and more sophisticated ways of blocking spam, while spammers will respond with innovations of their own. It is unfortunate that the casualties in this technological war will be average E-mail users.

16. Which word fits in the blank in paragraph 1?
A. Unfortunately
B. Otherwise
C. Finally
D. Indeed

17. The underlined word "automated" in paragraph 2 most nearly means
A. computerized   B. authorized   C. ineffectiveness   D. violation of privacy
18. In paragraph 3, the author implies that
A. Though spamming will continue, it will be only a minor inconvenience.
B. E-mail users suffer the greatest costs from the fight over spam.
C. It is only a matter of time before a permanent solution to spam is found.
D. Spam will become an increasingly serious threat to communication by email.
19. What does "their" refer to in the paragraph 3.?
A. e-mails   B. computer engineers   C. spammers   D. e-mail users
20. The best title of the passage (Part 2.) is
A. Internet Security   B. Solutions to Spam
C. Why is Spam Profitable   D. The Problems of Spam

The Effects of Multi-Modal Representations Used within the Context of Process-Based Instruction on Problem Solving, Academic Achievement, and Retention

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Abstract

The purpose of the present study is to determine the effects of two multi-modal representations, the use of text and graph for learning, on problem solving, academic achievement and retention when used in a process-based instruction (PBI). The study was designed as quasi-experimental study complying with pretest-posttest control group design. The study group consists of (N=30+34=64) students from the department of classroom teacher education in the Education Faculty of a university from west of Turkey in 2015-2016 academic year. The data in the study were collected through problem solving inventory, texts written and graphs drawn by the students and academic achievement test. For the data analysis, independent-sample t-test, Kruskal Wallis H-Test and descriptive analysis techniques were used. According to the findings obtained in the present study, it can be argued that while there is no significant difference between the academic achievements and problem solving skills of the students carrying out their learning activities according to drawing-modal representation and those of the students carrying out their learning activities according to writing-modal representation, a significant difference in terms of their retention was observed.

Keywords: Process-based instruction, multi-modal representations, problem solving, academic achievement, retention.

Introduction

In recent years, many of the studies dealing with the efficiency of learning and teaching process focus on students' critical thinking skills (Herman, 2002; Stupnisky, Renaud, Daniels, Haynes, & Perry, 2008; Şendağ & Odabaşı, 2009), problem solving skills (Chan & Fong, 2011; Dochy, Segers, Van den Bossche, & Gijbels, 2003; Rodriguez-Fornells & Maydeu-Olivares, 2000), developing students' planning skills (Ashman & Conway, 1993), self-orientation and self-regulation skills (Bandura, 1991; Carver & Scheier, 1998; Schunk & Zimmerman, 1994). Especially as a result of continuous renewal of information, process-based approaches requiring process-oriented creative and critical thinking, problem solving and planning learning have been adopted more than product-oriented learning (Connell & Seville, 2009; Duman, 2008). In the present study, the emphasis is put on multi-modal representations used by students carrying out their learning activities based on process-based instruction.

Process-Based Instruction (PBI)

The conceptual framework of process-based instruction (PBI) has been created from the findings of neuropsychology, planning, problem solving and cognitive psychology research and educational and psychological research looking at the educational models aiming to develop specific information and thinking strategies and planning the educational process by raising students' cognitive awareness (Ashman & Conway, 1993; Duman, 2008; Vermunt, 1995; Wong, 1992). The purpose of PBI is to facilitate independent-learning and teaching, promote being creative and problem solver and develop students' inquiry skills and competencies (Duman, 2008).

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PBI requires the use of cognitive and affective strategies to help students to construct their thinking and learning strategies, raise their awareness of the process, gain information and skills needed to plan the process in different programs. According to Ashman, Conway and Wright (1994), PBI is a kind of process where students from various levels of schooling are encouraged to develop their thinking skills while carrying out learning activities under the guidance of the teacher (Duman, 2008). The steps of process-based teaching-learning model are: i. Introduction, ii. Establishment, iii. Consolidation, iv. Incorporation.

According to Knowless (1984), PBI is made up of seven elements: establishment of setting, carrying out mutual planning, determination of needs, setting learning goals, design of learning plans, application of learning plans, and evaluation of learning. PBI model represents a systematic learning-teaching approach that can be used by students to improve their skills for planning learning and problem solving. Hence, all students can make use of process-based approach as a cognitive awareness–based study strategy or method to enhance their cognitive, affective and behavioral states (Duman, 2004).

During PBI, students are taught to plan what to learn and how. Barker (1989) states that process-design approach enables students to carry out contextual analyses of concepts and phenomena within the framework of multi-thinking rules from enhanced viewpoints. In such learning-teaching environments, information is constructed by the cognitive activities of the learner. Learners learn how and where to learn which information by developing their own strategies and plans. In learning-teaching processes, various strategies, methods and tools and equipments are used to improve students' problem solving, individual study, cooperative learning skills etc. in a constructivist and effective environment. One of these tools is different modal representations for learning purposes.

Learning-Aimed Multi-Modal Representations

Multi-modal representations are learning-teaching tools facilitating to learn and reifying the abstract concepts in line with the natural functioning of the mind to contribute to students' efforts made to achieve learning goals relating students' knowledge, skills and attitudes. According to Prain and Waldrip (2006), "multi-dimensional learning" means not only showing students how they perceive in different ways but also practice what they have understood by presenting them through different modes such as textual, graphical and mathematical. The purpose of learning-aimed text writing prepared in compliance with multi-modal representations is to reach come certain conclusions and generalizations by writing about the topics and concepts studied and consolidate the learning by using various writing genres such as text, scenario, story, composition etc.

The usage of multi-modal representations has different ways of applications and research results. According to Andersen and Munksby (2018) research in using representations for teaching and learning in science reveals that transforming representations and producing multi-modal representations can strengthen students' potential for learning concepts. Hoban and Nielsen (2011) state that meaning making by creating representations may be enhanced when students create more than one representation of a concept. In science education, multi-modal representations can be used as a language of science. According to Tang, Delgado, and Birr Moje (2014) representations are artifacts that symbolize an idea or concept in science (e.g., force, energy, chemical bonding) and can take the form of analogies, verbal explanations, written texts, diagrams, graphs, and simulations. Studies show us that multi-modal representations are related with developing scientific literacy. Van Rooy (2012) and Van Rooy and Chan (2017) state that new ways of representing and communicating scientific concepts in classroom practice necessitate new forms of assessment, which may be used to evaluate student competencies across the range of modalities and multiple representations that students are now expected to be conversant with in becoming scientifically literate. Another research about multi-modal representations Tang and Birr Moje (2010) stress that each of studies makes an important contribution to knowledge in the study of multimodality in science teaching and learning.

According to Rivard and Straw (2000), writing or symbolization is an important tool to convert the basic ideas embedded in information and make information coherent and cohesive. The purpose of learning-aimed graph drawing prepared according to multi-modal representations is to visualize what has been learned by symbolizing it and make learning permanent by using different graphical displays such as cartoon, flow chart, figure, table etc. Research based on PBI model used in learning-teaching processes (Ashman & Conway, 1993; Barker, 1989; Connell & Seville, 2009) has revealed that there is an improvement in students' learning level and their attitudes towards learning. It has also been reported that permanent learning is realized by students while performing activities through multi-modal representations in a multi-dimensional learning environment (Atila,

Günel, & Büyükkasap, 2010; Günel, Atila, & Büyükkasap, 2009). In addition to these, variations resulting from rapidly developing technologies and increasing circulation of information also alter students' learning expectations and needs. Therefore, learning activities and tools and equipments which can help students to improve their planning skills and their creativity are needed. In this respect, use of multi-modal representations in a PBI environment by students as a tool enabling them to make free use of their own learning strategies is expected to both meet students' needs and enhance the efficiency of learning-teaching process. Hence, the main focus of the present study is this question *"Does the use of writing and drawing-modal representations have some effects on problem solving skills, academic achievement and retention?"*

Purpose of the Study

The purpose of the present study is to determine the effects of learning-aimed writing-modal and graphic-modal representations based on process-based instruction on problem solving skills, academic achievement and retention. For this purpose, responses to the following questions were sought:
1. Is there a significant difference between the posttest academic achievement scores of the group carrying out learning activities by writing texts and those of the group carrying out the learning activities by drawing graphs based on process-based instruction?
2. Is there a significant difference between the retention levels of the group carrying out learning activities by writing texts and those of the group carrying out the learning activities by drawing graphs based on process-based instruction?
3. Is there a significant difference among the retention levels of the students carrying out their learning activities by writing texts based on process-based instruction according to the classification of the texts?
4. Is there a significant difference among the retention levels of the students carrying out their learning activities by drawing graphs based on process-based instruction according to the classification of the graphs?
5. Is there a significant difference between the problem solving scores of the group carrying out learning activities by writing texts and those of the group carrying out the learning activities by drawing graphs based on process-based instruction?

Method

The present study in which the effects of learning-aimed writing-modal and graphic-modal representations based on process-based instruction on problem solving skills, academic achievement and retention are investigated is structured as a quasi-experimental study with pretest-posttest control group design. The study was carried out on pre-service teachers attending the department of classroom teacher education of the Education Faculty at a university from west of Turkey in 2015-2016 academic year. The experimental design of the study is presented in table 1.

Table 1. Study design

Control group	Experimental group
Giving information and instructions	Giving information and instructions
Pretests	Pretests
Teaching the topic of "Visual Design Elements" (Process-based instruction)	Teaching the topic of "Visual Design Elements" (Process-based instruction)
Writing "Learning-aimed texts designed with multi-modal representations "	Drawing "Learning-aimed graphs designed with multi-modal representations "
Collection and evaluation of the written texts	Collection and evaluation of the graphs drawn
Giving feedback on the written texts	Giving feedback on the graphs drawn
Posttests	Posttests
Retention tests	Retention tests

Study Group

The study group consists of day-time and evening-time students (N=30+34=64) attending the department of classroom teacher education of the Education Faculty at a university from west of Turkey in the spring term of 2015-2016 academic year. The study group was determined by using random sampling method. Out of the participants, 48% (31) are males and 52% (33) are females. According to the information elicited by the personal information form, it is seen that the students are with middle socioeconomic and cultural level. The mean age of the students is 20. Academic achievement test was administered as a pretest to academically match the students and the results of the t-test revealed that there is no significant difference between them (p=.862). In this respect, it was found that the participants are equal in relation to the pretest scores.

Data Collection Tools

In the present study, three different data collection tools were employed. First one is Instruction Technologies and Materials Design academic achievement test; the second one is problem solving inventory to elicit the scores for problem solving skills; and the third one is texts and graphs formed by the students for their own learning activities.

The first data collection tool, Instructional Technologies and Materials Design achievement test, is related to issues of "Visual Design Elements". In this test, there are 20 multiple-choice questions. For the content validity of this test, literature review was made, the items concerning visual design elements were constructed and after exposing them to the scrutiny of three experts in the field, the test was developed. In order to determine the reliability of the test, it was administered to 50 students having taken the same course in the previous year and KR-20 reliability coefficient was found to be .79. The test includes items relating to visual elements, verbal elements, interest and attention drawing elements and metacognitive items concerning structural form in the design and arrangements in designs. The second one is problem solving inventory developed by Heppner and Peterson in 1982 (Savaşır & Şahin, 1997) to determine students' self-perceptions of their own problem solving skills. This scale was then adapted to Turkish by Şahin et al (1993). This inventory consisting of 35 items is constructed in the form of six-point Likert type. For the whole of the inventory, Cronbach Alfa internal consistency coefficient was found to be .90 by the developers of the inventory. For each item, participants are asked to indicate the frequency of displaying the behaviors stated in each item. The six options given for each item are "I always behave in this manner", "I usually behave in this manner", "I often behave in this manner", "I sometimes behave in this manner", "I rarely behave in this manner", "I never behave in this manner" During the evaluation stage, three items were discarded, and the other items are scored ranging from 1 to 6. The limits of the total score range from 32 to 192. The higher the total score taken from the scale is, the lower the self-efficacy of the participant felt for his/her problem solving skills is.

The third one is the texts and graphs created by students for their own learning activities. The texts were classified as "descriptive, explicative and synthesizer" and the graphs were classified as *"basic graph-drawing, flow chart, and concept map"*. The students' modal representations were analyzed according to these classifications.

Data Analysis and Interpretation

As the sampling of the study consists of two groups, t-test is thought to be the appropriate analysis method for this study. Prior to the study, t-test was used to analyze the data obtained from the administration of subject-based teaching technologies and materials design achievement test as a pretest to determine the readiness level of the students. Following the completion of the study, the same test was administered again as a posttest. Again, t-test (independent-sample t-test) was employed to analyze the data obtained from the posttest. For the retention test, Kruskal Wallis H-Test analysis was performed because of classification of the texts of the control group. Values calculated for normality tests to determine the distribution of the data set: Shapiro-Wilk significance value Problem Solving Inventory for pre-tests .129; Academic Achievement for pre-tests .193; Problem Solving Inventory for post-tests .214; Academic Achievement for post-tests .198. In this case, the data is normally distributed.
Problem solving skills elicited through problem solving inventory were separately analyzed for the control group and the experimental group. The high scores taken by the students from problem solving inventory indicate that their problem solving skills are inadequate. In the same manner, the low scores taken from problem solving inventory indicate that the problem solving skills of the students are good.

After the administration of PBI to the first group students (control group), they were asked to write learning-aimed texts about the relevant subject and concepts by using multi-modal representations. These texts then were classified as *descriptive, explicative and synthesizer* and were analyzed by seeking the expert opinions.

In the same way, the second group students (experimental group) were administered PBI and then they were asked to perform free graph drawings about the subject and concepts studied. These data were then classified as basic graph-drawing, flow chart, and concept map and then an evaluation was carried out on the data in light of 3 experts' opinions. Two of these experts are from Curriculum and Instruction field and one is from Primary School Teacher Training. According to the common views of the researchers and the experts mentioned, it was decided how to classify both text and graphic description modes. Parallel to the above-given explanations and classifications, the data were analyzed through descriptive analysis technique.

Activities Carried Out During the Experimental Process

Prior to the application, information and instructions were given to the groups about various modal representations by the researchers and then the steps to be followed throughout the study were explained. Throughout the study, following steps were followed with both the experimental and control groups: *"i. administration of the pretest, ii. Teaching of the topic "Visual Design Elements" based on process-based instruction, iii. Getting students to prepare texts and graphs by using multi-modal representations, iv. Collection and evaluation of modal representations, v. Giving feedback on modal representations, vi. Application of the posttest, vii. Administration of the retention test."* Throughout the process-based instruction, learning-teaching activities were designed as presented in the following flow chart.
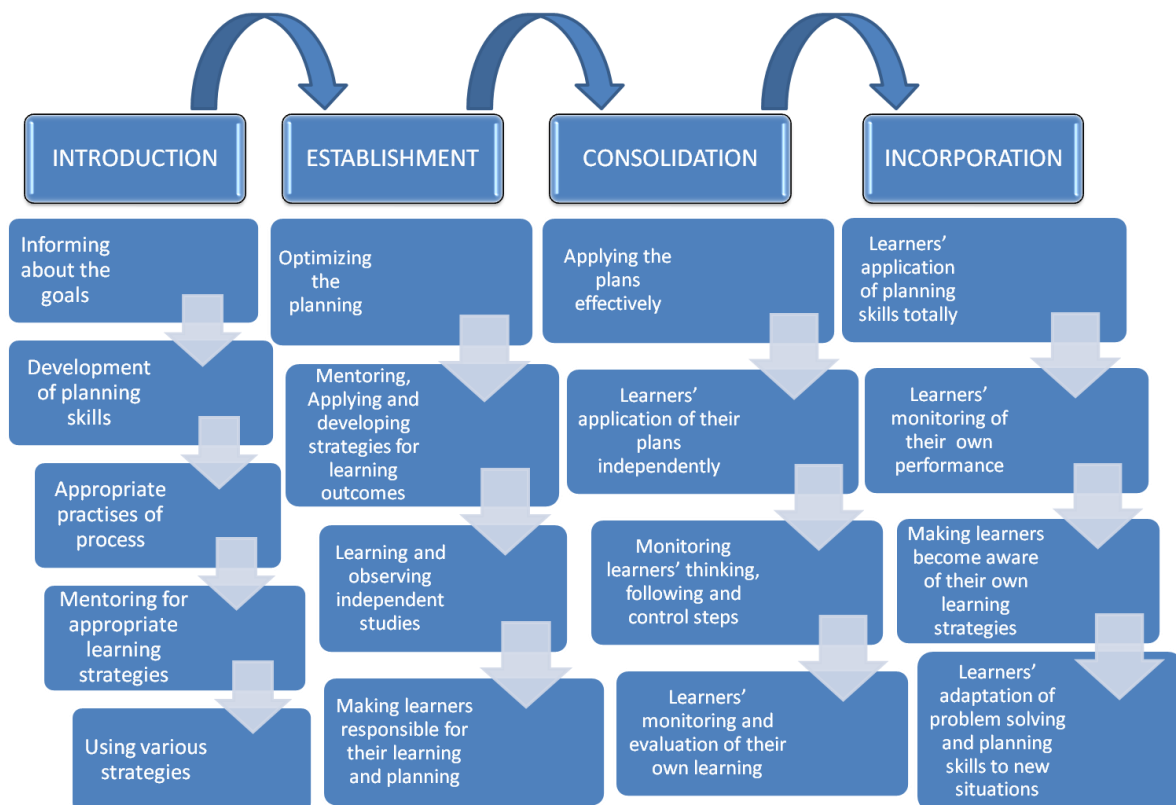
Figure 1. Flow chart of the process-based instruction

Introduction: First, the students were asked what the characteristic features of planning strategy, a pre-requisite for PBI, might be and discussions were conducted about them. Then, a general planning was made about Visual Design Elements; Visual – Verbal – Attractive Elements, Structural Form of Design and Arrangement of a Design and stages of the planning about the topic were applied.

Establishment: After making the necessary planning in the previous stage, orientation, application and acquisition strategies required by PBI were developed to establish learning activities about topic in the classroom. In accordance with these strategies, learning activities concerning the fact that visual design elements were divided into three as Visual – Verbal and Attractive elements and they were performed. The students were

promoted to examine and correct the activities they carried out; in this way, they were encouraged to take the responsibility for their own learning. Various applications and activities planned were carried out in the groups formed. While conducting the activities within the groups, each student was also rendered responsible for his/her own works.

After consolidating the strategies used by the students in their individual and group works, some more activities were performed for the preparation of the presentation of materials during the consolidation stage to improve and direct the students' planning skills. This is because during the process, it was planned for students to develop materials to teach a topic.

Consolidation: What is expected to be done at this stage of PBI is to find out how materials related to visual design elements should be developed to teach a different topic selected based on a different planning. In this respect, monitoring and controlling strategies were employed in the planning of effective presentation. The students were provided with opportunities to monitor and evaluate the planning activities carried out by using above-mentioned strategies. In this way, the students' thinking patterns and planning strategies were directed. At the stage of incorporation, for the students to use what they learned and their planning strategies for further applications at different settings, applications such as summarizing, repetition, question-answer etc. were carried out.

Incorporation: The development stage of PBI requires planning skills to be administered to a new situation. It is expected that plans should be exactly implemented; students can follow their own performances and be aware of the process. Therefore, collaborative activities were performed to yield special planning samples for the structural form in the design. In this way, the students were allowed to overgeneralize their planning skills to different activities.
After teaching the lessons and subjects in line with this flow, the control and experimental groups were exposed to following applications.

The Activities carried out in the Experimental Group at the End of the Process:
Following the pretest and PBI applications, the experimental group students were asked to carry out one more application to evaluate the learning activities; and they were promoted to evaluate the activities by using graphs. Then, the students were given feedback on their graph drawing activities.

Activities carried out in the Control Group at the End of the Process:
Following the administration of the pretest and PBI, the control group students were asked to carry out one more application to evaluate the learning activities; and they were promoted to evaluate the activities by using learning-aimed written texts designed according to multi-modal representations. Then, these written texts were evaluated and the students were given feedback on them.

Findings

In this section, findings of the study are presented. First, arithmetic means of the scores taken by students from pretest, posttest, retention and problem solving skills tests are presented in table 2.

Table 2. Mean scores taken by the experimental and control group students from pretest, posttest, retention and problem solving skills tests

Groups	N	$\overline{X}$ (Problem solving)	$\overline{X}$ (Pretest)	$\overline{X}$ (Posttest)	$\overline{X}$ (Retention)
Experimental group *(Drawing graphs)*	34	131.7	14.6	17.6	18.7
Control group *(Writing texts)*	30	130.5	14.6	17.5	15.8

When the table 3 is examined, it is clear that the pretest arithmetic mean score of the experimental group is $\overline{X}$ =14.6 and that of the control group is $\overline{X}$ =14.6. The posttest arithmetic mean score of the experimental group is $\overline{X}$ =17.6, and that of the control group is $\overline{X}$ =17.5. Retention test arithmetic mean score of the experimental group is $\overline{X}$ =18.7, and that of the control group is $\overline{X}$ =15.8. T-test was conducted to determine whether there is a significant difference between the groups. Table 3 presents the results of t-test carried out to determine

whether there is a significant difference between the posttest academic achievement scores of the experimental group and the control group [t(62)=.-321, p>.05].

Table 3. T-test analysis results of the posttest achievement scores of the experimental group and the control group

Groups	Posttest			
	$\overline{X}$	df	t	p
Experimental group *(Drawing graphs)*	17.6	62	-.321	.748
Control group *(Writing texts)*	17.5			

When table 3 is examined, no significant difference was found between the posttest achievement scores of the experimental group and the control group (p=.748). As a result of the application conducted in the present study, it can be argued that there is no significant difference between the groups in terms of their academic achievement scores. Then, t-test was conducted to determine whether there is a significant difference between the retention scores of the groups and the results of this test are presented in table 4.

Table 4. T-test analysis results of the retention scores of the experimental group and the control group

Groups	Retention			
	$\overline{X}$	df	t	p
Experimental group *(Drawing graphs)*	18.7	62	-3.502	.001
Control group *(Writing texts)*	15.8			

When table 4 is examined, it is seen that there is a significant difference in the retention levels of the groups favoring the experimental group carrying out learning activities by drawing graphs (p=.001). In addition to this, each group was classified into sub-groups based on the type of the writing or drawing. Within the control group, the students were classified into sub-groups depending on the type of the text and for each text type percentages and frequencies were calculated and presented in table 5.

Table 5. Classification of the learning-aimed texts written by the control group based on multi-modal representations and their percentages

Retention level	N	Descriptive		Explicative		Synthesizer		Total (%)
		N	(%)	N	(%)	N	(%)	
Medium *(15 or lower points)*	6	2	33	3	50	1	17	100
Good *(16-17-18 points)*	14	4	29	8	57	2	14	100
Very good *(19-20 points)*	10	0	0	4	40	6	60	100

When table 5 is examined, it is seen that 50% of the students having medium retention wrote explicative texts; 57% of the students having good retention wrote explicative texts. None of the students having very good retention was found to have written descriptive texts and majority of them (60%) wrote synthesizer texts which require higher level of competencies. The comparison of the control group students in relation to their posttest academic achievement and retention levels is presented in table 6.

Table 6. The comparison of the control group students in relation to their posttest academic achievement and retention levels

Retention level	N	Descriptive			Explicative			Synthesizer		
		N	$\overline{X}$ (Posttest)	$\overline{X}$ (Retention)	N	$\overline{X}$ (Posttest)	$\overline{X}$ (Retention)	N	$\overline{X}$ (Posttest)	$\overline{X}$ (Retention)
Medium (15 or lower points)	6	2	17.0	13.5	3	17.3	15.0	1	18.0	16.0
Good (16-17-18 points)	14	4	17.3	17.5	8	17.5	17.1	2	18.5	18.0
Very good (19-20 points)	10	0	-	-	4	18.5	20.0	6	18.8	19.2

When table 6 is examined, it is seen that the academic achievement level of the control group students having written descriptive texts and medium retention is lower than that of the students having good retention. Among the students having written descriptive texts, the ones having very good retention were found to have the highest academic achievement. Among the students having written synthesizer texts, the ones having medium retention were found to have lower academic achievement than the others. The table shows that parallel to the students' increasing level of academic achievement and their texts, their retention also increases. As can be seen in table 7, some retention scores are higher than academic achievement scores. This may be because the final exams by the students were taken at the same time when the retention test was administered. The retention scores of the control group students taken from the retention test in relation to the classification of their texts are presented in table 7.

Table 7. Kruskal Wallis H-Test analysis results of the students according to the classification of the texts of the control group

	Text types	N	Mean rank	df	x^2	p
Retention	Descriptive Text	4	9.00			
	Explicative Text	16	13.50			
	Synthesizer Text	10	21.30	2	7.72	.021
	Total	30				

According to within-groups text classification, the results of Kruskal Wallis H-Test analysis carried out for the groups carrying out their learning activities by writing texts reveals that there is a significant difference among the retention levels [x^2 (df=2, N=30) = 7.72, p<.05 p=.021] and in addition, there is a significant difference favoring the group writing synthesizer texts.

The experimental group students were classified depending on the types of the graphs they drew. The classification of the experimental group students' graphs and their percentages and frequencies are presented in table 8.

Table 8. Classification of the graphs drawn by the experimental group students and their percentages

Retention level	N	Basic-graphs drawing		Flow chart		Concept map		Total (%)
		N	(%)	N	(%)	N	(%)	
Medium (15 or lower points)	1	1	100	0	0	0	0	100
Good (16-17-18 points)	11	4	36	2	18	5	46	100
Very good (19-20 points)	22	3	14	6	28	13	58	100

When table 8 is examined, it is seen that majority of the experimental group students carrying out their learning activities by drawing graphs have very good retention. Moreover, 46% of the students having medium retention

drew their graphs in the form of concept map and at the same time, the majority of the students (58%) having very good retention drew higher level of graphs in the form of concept map. Comparison of the experimental group students according to their posttest academic achievement and retention levels is presented in table 9.

Table 9. The comparison of the experimental group students in relation to their posttest academic achievement and retention levels

Retention level	N	Basic-graph drawing			Flow chart			Concept map		
		N	$\overline{X}$ (Posttest)	$\overline{X}$ (Retention)	N	$\overline{X}$ (Posttest)	$\overline{X}$ (Retention)	N	$\overline{X}$ (Posttest)	$\overline{X}$ (Retention)
Medium *(15 or lower points)*	1	1	16.0	15.0	0	-	-	0	-	-
Good *(16-17-18 points)*	11	4	17.5	17.4	2	18.0	17.5	5	18.2	18.0
Very good *(19-20 points)*	22	3	18.3	19.5	6	18.5	19.5	13	18.7	19.8

In light of the results presented in table 9, when posttest scores of the students drawing basic graphs are compared, a linear increase is observed. The same situation holds true for students drawing flow charts and concept maps. Moreover, when the table is examined, it is seen that parallel to increasing posttest academic achievement test, their retention level also increases.

It is seen that majority of the students having good retention drew their graphs in the form of basic-graph drawing and the majority of the students having very good retention drew their graphs in the form concept maps. Furthermore, the posttest academic achievement of the students having very good retention was found to be the highest. Within the framework of process-based instruction, it can be claimed that the students carrying out their learning activities by drawing graphs have higher level of achievement and retention than the students doing their learning activities by writing texts. According to the classification of the graphs, results of Kruskal Wallis H-Test analysis conducted to determine whether there is a significant difference within-groups retention levels of the experimental group students are presented in table 10.

Table 10. According to the classification of the graphs, Kruskal Wallis H-Test analysis results of the experimental students

	Graphic types	N	Mean rank	df	x^2	p
Retention	**Basic-graph drawing**	7	10.21	2	5.57	.062
	Flow chart	10	18.30			
	Concept map	17	20.03			
	Total	34				

Kruskal Wallis H-Test analysis results revealed no significant difference among the the retention levels between groups of experimental students based on the type of graphs they drew [x^2 (df=2, N=34) = 5.57, p>.05 p=.062]. In line with the purposes of the present study, t-test analysis was carried out to determine whether there is a significant difference between the problem solving scores of the experimental group and the control group and the results are presented in table 11.

Table 11. T-test analysis results for the problem solving scores of the experimental and the control groups

Groups	N	Problem solving			
		$\overline{X}$	df	t	P
Experimental group *(Drawing graph)*	34	131.7	62	-.422	.674
Control group *(Writing text)*	30	130.5			

When table 8 is examined, no significant difference was found between the problem solving scores of the experimental group and the control group (p=.674). The application can be said not to have resulted in significant difference in relation to problem solving skills.

Discussions and Results

In light of the findings of the present study, it is seen that the use of learning-aimed wiring-modal representation and drawing-modal representation based on process-based instruction has some effects on problem solving, academic achievement and retention. In association with the process-based instruction, the students were taught with the help of texts written and graphs drawn. The findings of the present study show that there is no significant difference between the posttest academic achievement and problem solving skills of the experimental group students and the control group students; yet, there is a significant difference between their retention levels favoring the experimental group students carrying out their activities by drawing graphs. This may be due to the use of learning text and graphic description modes used in experimental and control groups.

Throughout the study the students actively participated and they were provided with relaxed and flexible learning environment. The students were encouraged to be successful, provided with learning opportunities based on their own experiences and helped to enhance their learning through texts and graphs. In a study by Apps (1994) on PBI, it was concluded that the individuals should be encouraged to involve their personal experiences in the process, which would help them to understand better. When the literature on PBI is reviewed, it can be argued that the learning motivation of students encouraged, motivated and supported increases (Ashman et al., 1993; Duman, 2002). Birmingham and Garnick (1994) found that teachers can facilitate learning by using PBI and when PBI is used, students' satisfaction with their works is improved.

In research on PBI, Bolhuis (2003) stated that PBI has four main principles. First, "helping students to acquire the competency of arranging all the components involved in learning"; second, "triggering the process of information construction required to gain specialization in a specific field"; third, "helping students to see the details of affective impacts and meaning patterns, which enhances students' learning motivation"; fourth, "providing students with opportunities to understand learning process and to obtain social gains." Bolhuis (2003) argues that teaching cooperative learning and social skills promotes cooperative and critical questioning skills. Various activities performed within the context of the present study (cooperative activities, group works etc.) helped students to construct information, feel more motivated, and improve their self-directing, planning and social skills. In order to help students to see and evaluate their own learning, learning activities were designed by getting them to write texts and draw graphs and in this way, the students felt responsible for their own learning and actively participated in the process. Connell and Seville (2009) state that the role of the students in PBI is working both individually and within small groups by being exposed to experiential learning to make them consciousness of their responsibilities.

Borthwick et al., (2007) argue that students' working in cooperation and providing students with settings to work in groups have positive contributions to students' many aspects ranging from their perception and understanding to their critical reflection. According to Connell and Seville (2009), the role of the instructors during the process is to arrange the learning setting in such a way that students can discover societal issues. This arrangement should consider the components of PBI (establishment of the setting, making reciprocal planning, determination of the requirements, setting learning objectives, design of learning plans, application of learning plans, evaluation of learning) while planning is being performed. In such non-traditional environment, while students are in a constant interaction with their peers and teachers, there is a need to create opportunities for them to exchange information. In the present study, the students were provided with counseling, directing, and cooperative learning opportunities and enriched learning environments. This case enabled students to exchange their ideas with effective communication and to increase their problem solving skills with presenting rich stimulus. Rodriguez-Fornells and Maydeu-Olivares (2000) emphasize that problem solving skills are one of the predictors of academic performance and former academic experiences are one of the factors effecting students' success.

In the present study, learning products were developed through the students' own experiences and perceptions and texts and graphs and the students were made aware of their responsibilities for their works while learning from their experiences. Connell and Seville (2009) concluded that students' making critical reflection on their experiences and realizing the importance of high level of participation are of great importance in teaching. Within the context of PBI, the students made use of multi-modal representations here and they drew graphs through which they created connections between their former and new information. In this way, they processed

the information in a planned or concrete manner. Duman (2008) states that PBI increases the retention of information or provides the learner with many strategies when prior information needs to be remembered. One of these strategies requires the visualization of visual images in the mind.

In the present study carried out based on PBI, the control group wrote texts and the experimental group drew graphs. The students while carrying out their individual learning with these modal representations actively participated in the activities. The texts written by the control group students were classified hierarchically (from simple to complex) "descriptive, explicative, synthesizer" and the graphs drawn by the experimental group students were classified as "basic drawing, flow chart, concept map". No significant difference was found between the experimental group and the control group in terms of their academic achievement and problem solving skills. Yet, a significant difference was found between their retention levels. The reason for this difference was looked for in within-group classifications and through comparison made between the retention levels of the experimental group and the control group. In other words, it is seen that the graphical description mode used by the students in the experimental group contributes more to the permanence than the text description mode used by the students in the control group. As a result, it was found that the control group students have higher retention levels depending on increasing posttest academic achievement and text complexity level. In a similar manner, it was found that the experimental group students having high retention levels also have posttest academic achievement. Parallel to these findings of the present study, Günel et al., (2009) found that encouraging students to use modal representations (texts, graphs, mathematical modal representation etc.) may result in increasing academic achievements. In addition to this, Hand et al., (2009) emphasize that multi-modal representations embedded in texts have critical effect on understanding the topics. This may be thought to have some effects on academic achievement and retention. McDermott and Hand (2009) carried out a study with multi-modal representations and argued that teaching information through multi-modal representations may have some contributions to the development of students' comprehension. In another related study Taylor and Villanueva (2014) state that the old adage, "A picture is worth a thousand words" rings true with children who struggle to describe the way they planned and carried out their investigation. In addition to this, to increase academic achievement, for conceptual understanding and to engage in key scientific practices, students may use multi-modal representations.

Results of analysis revealed that there is a significant difference favoring the students writing synthesizer texts within the control group. However, no such difference based on the classifications of the graphs was observed within the groups of the experimental students. Atila et al., (2010) claim that if the teacher ask students to employ some other modal-representations together with learning-aimed writing, the efficiency of activities and academic achievement increase. According to Duman (2009), the brain takes the photos of concrete things rapidly while learning. The things seen are perceived by the brain and create important traces in the mind of an individual and the things learned in this way are hard to forget. This may be the reason why there is a significant difference found in the retention level favoring the experimental group in the present study. That is, graphs are easier to remember than the texts, which may have direct influence on retention level.

In light of the findings of the present study, it can be claimed that the use of learning-aimed writing and drawing-modal representations based PBI has positive impacts on problem solving skills, academic achievement and retention. In addition to this, the use of drawing modal representation has significantly more positive impacts on retention. Therefore, it seems to be clear that the use of PBI-based drawing-modal representation in learning-teaching process is important. PBI-based teaching activities can be organized in cooperation with materials designed based on different multi-modal representations can be very useful in helping students having learning and retention problems to enhance their motivation and achievement levels.

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Supporting Pro-Social Development of 60-66 Month Aged Children with the Drama Method

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Abstract

The purpose of this study is to reflect the effectiveness of a drama education program, identify the pro-social behaviour level of children, and determine the effects of the drama education program on the pro-social behaviours of children. In this study, experimental method with the pre-test, post-test retention control group design is adopted. General information form and a Collaboration-Cooperation-Sharing Observation Form are used as data collection tools. Under the scope of this study, a 12-week drama education program is applied. The results of the study show that there is a significant difference between pre-test/post-test and retention scores between the experiment and control group. It is seen that drama education is effective for children to gain collaboration, cooperation and sharing behaviour, to adopt these behaviours and to internalize them.

Key words: Pro-social behaviour, Drama, Preschool education

Introduction

Individuals can live in harmony within the society they live in by gaining social behaviours. With the help of social behaviours, individuals learn to approach other individuals in a positive way and these individuals are included in the society (Ladd, Kochenderfer, & Coleman, 1996). These positive approaches start with development of pro-social behaviour.

Pro-social behaviours are things such as collaboration, cooperation, sharing, forgiveness and consolidation to provide benefit to others without anything in return (Eisenberg, Spinrad, & Knafo-Noam, 2015). Additionally, pro-social behaviour is represented as positive interpersonal behaviour. Pro-social behaviours are also known as not showing anti-social behaviour. Additionally, it can be found that an individual who shows pro-social behaviour has positive ethical development (Uzmen & Mağden, 2002). Individuals are motivated to show pro-social behaviour on their own and act by showing self-sacrifice or by taking risks (Eisenberg, Van Schyndel, & Spinrad, 2016). A child giving a piece of her playdough to her crying friend can be given as an example. In this example, a child helped her crying friends by sharing and made a sacrifice without any interest, return or reward (Bayhan & Artan, 2007).

Pro-social behaviours occur in the early period of life (approximately one, and one and a half years of age) and develop further during life (Eisenberg, Spinrad, & Knafo-Noam, 2015; Hammond & Brownell, 2015). Babies around one year old ask help from adults and show certain positive behaviours (Liszkowski, 2005). When they are about three years old, they hug people, share their objects and toys when they notice sad individuals (Bandstra, Chambers, McGrath, & Moore, 2011). After four years old, children start to gain a higher level of social perspective (Paulus, 2015). At these ages, factors like efforts of other children, needs, and being a member of a group are effective on children's behaviour. Although these pro-social behaviours develop throughout life, the basis of these behaviours are formed in the pre-school period (Bayhan & Artan, 2007).

It was seen that children who gain pro-social behaviours in the pre-school period had positive gains in academic skills in the future (Caprara et al., 2000; Rhoades, Warren, Domitrovich, & Greenberg, 2011) and children showing these behaviours had a lower level of peer victimization and peer rejection (Kokko et al., 2006;

Veenstra et al., 2008). Additionally, Reynold, Gast and Luscre (2014) state that children's gaining positive social behaviour is effective for psychological well-being and coping with employment and work life problems.

It is important to consider how children can gain these pro-social behaviours which have important effects on children. Children observe their surrounding and people around them starting from their infancy. Children learn how to behave and how to react by observing, imitating, and taking a role-model from the individuals around them. In this case, since children have a possibility to encounter negative examples as well as positive examples, the effects of negative examples should be minimised. Additionally, such passive observation of children will not have permanent marks on their behaviour. Therefore, these behaviours should be offered systematically under a certain plan with effective methods for children to gain these behaviours (Doescher & Sugawara, 1989; Uzmen & Mağden, 2002; Fazlıoğlu & Ercan, 2014). Effective education methods through which a majority of the desired behaviour leave a permanent mark on children are methods allow children to be at the centre of education and active during the learning process. One of these methods is drama. Edmiston (2013) emphasise that children in a drama-based education program are more successful in an academic and social sense compared to traditional education programs and drama is an effective education method.

Drama is the process where individuals review an event, thought, and subject by restructuring it with past experiences (San, 1990). Drama helps children be effective within the learning process and learn by experiencing, experience real events, and enabling self-realisation and contributes to children to be creative individuals (Kaf, 2000). Drama is a group activity and occurs as society (Heathcote, 1990). Therefore, drama activities offer an interactive work environment. Children act in an aesthetic and kind way during drama work and express themselves (Neelands, 2009; Rasmussen, 2010).

In drama, children share with each other, interact and help each other to analyse a dramatic situation. Snape et al. (2011) emphasised that drama developed behaviours like collaboration, helping, and respect among children. Children show all these behaviours without a return during the drama session. This enables development of pro-social behaviours of children and transferring these behaviours to the lives of children by using drama method. In short, drama method alone is effective for pro-social behaviour development in children. However, Elias and Arnold (2006) stated that these behaviours should be presented within a plan to support the social development of children. It was emphasised that children can internalise behaviours offered in the systematic manner and can turn into behaviour in an easier way. Therefore, it is clear that the drama sessions are more effective when these sessions are prepared with content that will develop pro-social behaviour and in a planned way.

Based on this notion, the purpose of this study is to reflect on the effectiveness of a drama education program, identify the pro-social behaviour level in children, and determine the effects of the drama education program on the pro-social behaviour of children.

Method

Model of Study

To evaluate the effectiveness level of drama education program on pro-social behaviours of children in this study, the experimental design with pre-test, post-test and retention test design was adopted. The experimental pattern compares changes on dependent variables by intervening to independent variables (Büyüköztürk, 2014). In this study, a 2x3 mixed pattern was adopted. In this pattern, there were at least two independent variables that analyse effectiveness on the dependent variable. One of these variables analyses the different operations formed from the independent groups while other one characterizes the repetitive measurements (pre-test/post-test-retention test) on the different times of participants in the study group (Büyüköztürk et al., 2011).

Study Group

The study group was determined with the convenience sampling method. Convenience sampling is one of the non-random sampling methods that is preferred for easy access and suitability (Berg, 2000). Accordingly, 39 children in two pre-school classes in different pre-school institutions formed the sample of this study. The experiment group consisted of 21 children while the control group consisted of 18 children. While the drama education program was applied to 21 children in the experiment group, there was no intervention to children in the control group.

Instruments

As data collection tools, the Personal Information Form developed by the researcher and the Collaboration-Cooperation-Sharing Observation Form (CCSOF) developed by Metin and Şenol (2017) were applied.

Personal Information Form:

Personal Information Form includes questions about the child's gender, date of birth, previous pre-school education status, number of siblings, age and occupation of mother and father, and information about their education.

The Collaboration-Cooperation-Sharing Observation Form (CCSOF):

CCSOF was developed by Metin and Şenol (2017) to determine the collaboration, cooperation and sharing behaviours of children in pre-schools with children with special needs. In this study, since there was one child with special needs in both the experiment group and control group, CCSOF was applied.

CCSOF consisted of three sub-dimensions and 22 items. These sub-dimensions were collaboration (7 items), sharing (5 items) and cooperation (10 items). This form contained separate items that determined behaviours of normal children compared to normal peers and children with special needs. Additionally, CCSOF separately evaluates how frequent children do these behaviours "on their own" or "when their teacher wanted" on the same items. Items on the observation form were scored as Always (3 points), Sometimes (2 points) and Never (1 point).

When the Cronbach Alpha internal consistency reliability coefficient of CCSOF was analysed, it was found that total reliability was 0.80 and for sub-dimensions, collaboration sub-dimension was 0.75, cooperation sub-dimension was 0.69, and sharing sub-dimension was 0.68 (Metin & Şenol, 2017).

CCSOF was only applied during play time. For application, "intermittent observation" among observation techniques was adopted. In intermittent observation, observation units are observed at certain time intervals or at sampled time intervals (Karasar, 2007). Five children were randomly selected from the classroom. After each child was observed for five minutes, second and third observations were completed starting from the first child. Each child was observed for a total of 15 minutes for 3 times and evaluated (Metin & Şenol, 2017).

Drama Education Program

This is a program aiming to develop collaboration, cooperation and sharing behaviours among pro-social behaviours among 60-66-month-old children. While this program was being developed, literature related with social skills, social behaviour and pro-social behaviour were reviewed. It is stated that by showing collaboration, cooperation and sharing behaviours in the pre-school period, children are becoming individuals who form relationship with people around them and show positive behaviours. Additionally, it can be thought that collaboration, cooperation and sharing behaviours are the basis for showing other pro-social behaviours. In this scope, it was decided to support collaboration, cooperation and sharing behaviours among pro-social behaviours with the drama method.

Drama plans were prepared to contain warm-up, impersonation and evaluation stages. The drama method was structured with various techniques. Among these techniques, improvisation and role playing were main elements of the drama and at the impersonation stage, these methods must be employed for dramatic event analysis. However, it is not easy for children who have not encountered with these techniques frequently to analyse techniques such as improvisation. Therefore, all techniques in the drama method were structured from easy to hard and presented to the children.

When selecting gain indicators, gain indicators that supported collaboration, cooperation and sharing behaviours during the Pre-School Curriculum (2013) were considered as a basis. Plans included interesting materials that would increase participation of children. Drama education program consisted of 12 sessions. Each session was planned to last for 40 minutes on average. Among these sessions, four was prepared for collaboration, four for cooperation and four for sharing behaviours. Although there were dominant behaviours in the plans, other behaviours were also included.

Data Collection

The pre-test was applied to a selected experiment and control group of children before the Drama Curriculum application. Later, the drama curriculum was applied only to the experiment group for 12 weeks and one session per week (approximately 40 min per session). When application was completed, the post-test was applied to the children in the experiment and the control group. Four weeks after post-test was applied to experiment group children, the retention test was applied.

Data Analysis

To determine whether the scores of the experiment and control group children showed a normal distribution for the Collaboration-Cooperation-Sharing Observation Form, the Shapiro Wilk test was applied to the pre-test, post-test, and the retention test measurements. Accordingly, the Mann Whitney U (MWU) test was applied for the values that did not show normal distribution when two independent groups were compared. For values that did not show normal distribution among the difference comparison of the two pairs in the dependent groups, Wilcoxon Signed Ranks (WSR) test and for values with normal distribution, Dependent Group t test was applied (Alpar, 2014).

Limitation of Study

This study was limited to collaboration, cooperation and sharing behaviours of pro-social behaviour. The prepared drama sessions focused on these three behaviours. This study was limited with one control and experiment group. Results were limited with results obtained from CCSOF.

Results

Findings obtained from the pre-test/post-test comparison of the experiment and control group and post-test and retention test comparison of experiment group for Collaboration-Cooperation-Sharing Observation Form are presented below.

Table 1. Pre-test/post-test scores of the experiment and control group.

CCSOF	Tests	Groups				MWU	
			n	Mean	Sd.	U	p
Collaboration	Pre-test	Experiment	21	8,19	0,92	56,5	0,001
		Control	18	9,83	1,20		
	Post-test	Experiment	21	19,90	1,04	0	0,001
		Control	18	11,05	0,87		
Cooperation	Pre-test	Experiment	21	11,66	1,35	79	0,002
		Control	18	13,44	1,65		
	Post-test	Experiment	21	28,71	0,90	0	0,001
		Control	18	17,44	1,33		
Sharing	Pre-test	Experiment	21	5,76	1,04	53	0,273
		Control	18	6,00	0,90		
	Post-test	Experiment	21	14,33	0,79	0	0,001
		Control	18	7,94	0,87		
Total	Pre-test	Experiment	21	25,61	2,53	63,5	0,001
		Control	18	29,27	2,92		
	Post-test	Experiment	21	62,95	2,31	0	0,001
		Control	18	36,44	2,57		

When Table 1 was analysed, in CCSOF while collaboration (U= 56.5, p<.05), cooperation (U= 79, p<.05) pre-test scores of control group was significantly higher in sharing (U= 53, p>.05) sub-dimension, there was no significant difference between the experiment group and the control group. In CCSOF "collaboration (U= 0, p<.001), cooperation (U= 0, p<.001), sharing (U= 0, p<.001)" sub-dimensions, it was seen that the post-test score average of the experiment group was significantly higher.

Table 2. Pre-test/post-test scores of the experiment group children.

CCSOF	Test	WSR				
		n	Mean	Sd	z	P
Collaboration	Pre-test	21	8,19	0,92	4,042	0,000
	Post-test	21	19,90	1,04		
	Post-test	21	19,90	1,04	2,517	0,012
	Retention	21	20,61	0,66		
Cooperation	Pre-test	21	11,66	1,35	4,033	0,000
	Post-test	21	28,71	0,90		
	Post-test	21	28,71	0,90	3,148	0,001
	Retention	21	29,47	0,67		
Sharing	Pre-test	21	5,76	1,04	4,049	0,000
	Post-test	21	14,33	0,79		
	Post-test	21	14,33	0,79	2,714	0,007
	Retention	21	14,76	0,53		
Total	Pre-test	21	25,61	2,53	4,021	0,000
	Post-test	21	62,95	2,31		
	Post-test	21	62,95	2,31	3,441	0,001
	Retention	21	64,85	1,19		

When Table 2 was analysed, according to Wilcoxon the signed ranks test results, "collaboration (z = 4.042, p<.01), cooperation (z = 4.033, p<.01) and sharing (z = 4.049, p<.01)" sub-dimension post-test score averages of experiment group children were significantly higher than pre-test score averages. In CCSOF, for "collaboration (z = 2.517, p<.01), cooperation (z = 3.148, p<.01) and sharing (z = 2.714, p<.01)" sub-dimensions, retention test score averages of experiment group children was significantly higher than post-test score averages.

Table 3. Pre-test/post-test scores of control group children.

CCSOF	Tests	WSR				
		n	Mean	sd	Z	p
Collaboration	Pre-test	18	9,83	1,20	2,965	0,003
	Post-test	18	11,05	0,87		
Cooperation	Pre-test	18	11,83	1,38	3,743	0,001
	Post-test	18	15,38	1,33		
	Pre-test	18	6,00	0,90	3,663	0,001

					T	p
Sharing	Post-test	18	7,94	0,87		
Total	Pre-test	18	29,27	2,92	9,131	0,001
	Post-test	18	36,44	2,57		

When Table 3 was analysed, according to Wilcoxon Signed Ranks Rest and Dependent Group t-test results, "collaboration (z = 2.965, p<.05), cooperation (z = 3.743, p<.05) and sharing (z = 3.663, p<.05)" sub-dimension and total (t=9.131, p<.05) post-test score averages of experiment group children were significantly higher than pre-test score averages.

Table 4. Pre-test/post-test score differences of experiment and control group.

CCSOF	Test	MWU				
		n	Mean	sd	U	p
Collaboration	Experiment	21	11,71	1,23	0	0,001
	Control	18	1,22	1,26		
Cooperation	Experiment	21	17,04	1,53	0	0,001
	Control	18	4,00	2,00		
Sharing	Experiment	21	8,57	1,28	0	0,001
	Control	18	1,9444	1,21		
Total	Experiment	21	37,33	3,32	0	0,001
	Control	18	7,16	3,32		

When Table 4 was analysed, according to the Mann Whitney U test result, it was determined that there was significant difference for CCSOF "Collaboration (U= 0, p<.05), Cooperation (U= 0, p<.05) and Sharing (U= 0, p<.05)" sub-dimensions and total (U= 0, p<.05) pre-test and post-test score averages of the experiment group and control group children. When rank averages were considered, children that had the education had significantly higher scores in all sub-dimensions compared to children who didn't attend to program.

Discussion

This study aiming to support pro-social behaviours of 60-66 months old children with the drama method put forth that there was significant difference between the pre-test/post-test and the retention scores of the complete CCSOF and sub-dimensions between the experiment and control group. When the difference between the pre-test scores were analysed, it was seen that this difference was in favour of the control group. When pre-test scores of the experiment and control group were analysed, although the control group children had higher scores, differences between the averages were not high and the groups can be considered homogenous. Post-test average scores of the experiment group children from the complete scale and sub-dimensions are significantly higher than the pre-test and retention test scores. Post-test average scores of the control group children from the complete scale and sub-dimensions are significantly higher than the pre-test scores. When differences between the pre-test and post-test scores of experiments and the control group children are evaluated, there is a significant difference in favour of the experiment group.

Social skills play an important role for the social developments of children (Fung & Cheng, 2017). It is observed that children who have acquired social skills are successful and happy in their later lives. The development of social skills occurs more effectively, when children interact with each other. Therefore, in order for the development of social skills of children, appropriate methods should be used in which children interact with each

other. Among these methods, one of the most influential one is drama (Duffy, 2015; Lynch & Simpson, 2010; Onemli, Totan, & Abbasov, 2015). According to Schellenberg, Corrigall, Dys and Malti (2015), drama improves the social skills of children since it has an inherently interactive structure. Since drama is a group activity, this activity would strengthen the relationships between children and increase the frequency of positive behaviours. Additionally, drama practices allow individuals to observe social behaviors through both internal and external perspectives and to adopt them more easily (Frydman, 2016). In this study, it was seen that the frequency of showing collaboration, cooperation and sharing behaviour increased in the experiment group children after drama education and retention tests showed that these behaviours were permanent. Various studies support the effects of drama on children's social skills. For example, Chalmers (2007), Yeh and Li (2008) and Gullo (2005) stated that drama has an effect to help children gain social behaviours and skills such as collaboration, cooperation and sharing, and being nice. It was emphasised that the drama curriculum prepared to develop social skills of children are important for modelling and role-playing aspects (Önalan, 2006). Cömertpay (2006), emphasized that drama studies improve social sensitivity of children. As a result of the drama education program implemented by Kıyaker (2017), it was concluded that there was an increase in children's self-regulation skills and positive emotions. In addition to this research, Adıgüzel (2017) and Pyle and Bigelow (2015) emphasized that play activities have an impact on social developments of children. Ulubey (2018) also state that pre-school children's development is more effective since the drama activities are play-based. Moreover, as the conclusion of a meta-analysis study, Ulubey (2018) stated that the drama method was effective in the development of social skills of children. Based on these results, it can be said that the Drama Education Program is an effective program to develop collaboration, cooperation and sharing behaviour.

Gaining collaboration, cooperation and sharing behaviour that form the basis of positive communication with individuals around them and form the basis of social behaviours of children at early ages is extremely important. When these behaviours are formed in a systematic plan, children could learn these behaviours more easily and these behaviours become permanent (Elias & Arnold, 2006; Şahin & Karaaslan, 2006). Lawton and Burk (1995), who studied 3-5 years old children to develop behaviours such as collaboration, cooperation, sharing, waiting in line and empathy, showed that children that participated in the study showed development. According to Snape et al. (2011), drama applications increase the tendency to show these behaviours. As the conclusion of a study, in which the master's theses conducted on drama practices were examined, Can, Yaşar and Aral (2011) emphasized that drama was effective on social emotional development of children. Karapetian and O'Leary (1985) applied gamified stories to develop sharing behaviours of children and found that the sharing behaviours of children increased at the end of the study. Gültekin (2014), Güven (2006) and Uysal (2008) stated that the creative drama curriculum applied on children positively affected social and emotional development of children. As a result of a study, in which role-playing and dramatic play activities were applied to children at home and school environments, Fung and Cheng (2017) concluded that children's social competencies increased. In an experimental study conducted by Goldstain and Lerner (2018), it was concluded that dramatic play activities positively affected the social emotional development of children in the experimental group. Rubtsova and Daniels (2016) argued in their study that the communication and social skills of individuals were improved through bringing new perspectives in dramatic situations in drama. Additionally, collaboration, cooperation and sharing behaviour development (Sözkesen, 2015), social emotional development (Öztürk Samur, 2011), social skills, social problem-solving skills and psycho-social development (Dereli, 2014), social skills (Neslitürk, 2013) are found to be permanent based on applied curriculum. Abovementioned implementations and the retention test in these studies support the effect of the drama method on collaboration, cooperation and sharing behaviour as found in the current study. It is evaluated that this result emerged from the communication of children with their friends through playing various roles during drama activities, their solutions about the dramatic situations through sharing/helping and establishing positive relationships with their friends, their decisions based on cooperation for reaching the solution, and particularly, this result emerged from the fact that they acquire all these experiences by practicing and experiencing.

When the results were analysed, it could be stated that the control group children who did not participate in the drama application gained these behaviours within the natural development process and pre-school education. Results of the study found a slight development in control group children as well as the experiment group children. Accordingly, studies of Sözkesen (2015), Uzmen (2002), Kahraman (2007), Ekmişoğlu (2007) and Üner (2011) showed that there were developments in collaboration, cooperation, sharing, and empathic behaviour of children who previously attended to pre-school education but did not attend to drama curriculum. Additionally, social skills (Freeman et al., 2003), social emotional development (Gültekin, 2014), collaboration, cooperation, sharing, empathy, and waiting in line behaviour of children (Lawton & Burk, 1995) are found that who did not attend to drama application developed at a low level. Goldstain and Lerner (2018) reported that there was no change in the social emotional development of the children in the control group, who did not participate in dramatic play events. It can be mentioned that the results of the abovementioned research studies

support the results obtained from the control group in this study. It is considered that this change was based on by the natural maturation process of children and pre-school education and their sharing and cooperation with the people around them.

In short, the results of the present study suggest that drama education is effective for children to gain collaboration, cooperation and sharing behaviour, to adopt these behaviours and to internalise them. It is believed that these results are important since these behaviours form the basis to gain pro-social behaviours.

Recommendations

Different education methods could be added to the drama curriculum and the applied curriculum can be extended. The observation form adopted in this study to measure positive social behaviours can be applied with measurement tools to measure the opinions of teachers and parents and enriched with data that enables a one to one application on children to turn data into a more objective form. This study could be applied on a larger sample and demographic properties obtained from experiment group could be compared.

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Mixed Method Research: Theoretical Foundations, Designs and Its Use in Educational Research

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Abstract

In educational sciences, 90s were the scene of the paradigmatic wars, as the researchers of quantitative or qualitative research only defended the ideas of the type of research they used and they constantly criticized the counter-paradigm. While this struggle is going on, mixed method research has emerged, a pragmatist approach that believes both methods of research are necessary and useful, and that these two methods can be used together when the research problem requires. In the 2000s, numerous studies on mixed method research have led this approach to be accepted as a third paradigm. From this history to the present, many studies have been carried out on this topic, from the philosophy of the mixed method to the genres, from the methodological substructure to the stages. Presenting a theoretical perspective, this study aims to scrutinize mixed method research with a special emphasis on its philosophical development and models. The weaknesses and strengths of mixed method as a research paradigm are also touched upon. Finally, its use in educational sciences and future directions regarding the development of this research method are discussed.

Key words: Mixed method research, Educational research, Research design

Introduction

The source of knowledge is an important issue that scientists, especially philosophers, are struggling with. Some different approaches of thought in this regard include positivism, idealism, rationalism, realism, and empiricism. Instead of making a clear-cut definition of science, it will be better to use the definition of systematic knowledge that is validated (Karasar, 1991). Therefore, the process of producing scientific knowledge requires a methodology. In scientific research, the methodology guides the researchers in all processes from the correct creation of the research questions to the final reporting.

As a mainstream field of scientific research, Educational sciences have long witnessed the effect of quantitative research methodology based on positivist paradigm. According to quantitative research, there is an order of the universe and this order can be grasped by man. In this type of research, the opinion that knowledge can be obtained through experiments and observations is prominent. In quantitative research methods, the idea that if there is something, there is an amount of it, and that amount can be measured is dominant. Therefore, standardized measurement tools are used to measure latent variables believed to exist in individuals, and with the help of these tools, data is collected from them. Whether there is a difference between different groups categorized according to their specific features is tested by statistical methods. The aim here is to determine whether the averages obtained from the groups differ in terms of the measured feature.

According to quantitative research, all steps from the development and implementation of measurement tools to the interpretation of the obtained values are objective. Accordingly, the researcher carrying out a quantitative research process must be objective as well. Thus, the data obtained and the process of interpreting this data will not differ from person to person. As can be seen, in quantitative research method, the data obtained from the "sample" representing the "universe", is generalized. In quantitative research method, the theory-concept relation must be confirmatory or falsifying.

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The emergence of new developments in natural sciences such as Einstein's "Theory of Relativity" and Heisenberg's "Uncertainty Principle" which undermine the foundations of positivism, also led the shaping of an alternative paradigm. According to this new paradigm called post-positivism / interpretive paradigm; reality is complicated, not simple. Systems cannot be classified in a hierarchical order from simple to complex, and the universe cannot be understood mechanically. Possibilities for the future might be known, but it is not possible to predict the exact results (Yıldırım & Şimşek, 1999).

Having emerged based on this paradigm, qualitative research is grounded on a constructivist, postmodern and post-positivist philosophy. The cause-effect relationship cannot be mentioned in qualitative research methodology. There is the mutual causality, intuition and deep understanding. Since each research is specific to itself and the group being applied, no concern is raised regarding the generalization of information. In this research method, theory and concept are reconstructed each time. Qualitative research argues that the researcher's own feelings and thoughts' not affecting the research process, in other words objectivity, is not possible. Accordingly, the identification of the problem and the focus of the study are also subjective. Therefore, the researcher's attitude, opinion and value judgments will naturally be a part of the research. Thus, qualitative research is defined as the research in which a qualitative process that uses qualitative data collection methods such as observation, interview and document analysis is followed to identify and explore perceptions and events in a realistic and holistic manner in the natural environment (Yıldırım & Şimşek, 1999).

Considering these basic arguments which quantitative and qualitative research methods are based on, it can be seen that the two research methods show significant differences and even their perspectives on the same subjects are completely opposite. These research methods of two different paradigms are supported by different epistemological, ontological and axiological philosophies (Johnson & Onwuegbuzie, 2004; Bergman, 2011).

Theoretical Foundations and the Development of Mixed Method Research

Researchers, not adopting a single quantitative or qualitative research approach alone, see their own side as the ideal paradigm. While the paradigm wars that arose in 90s were continuing among these two methodologies, mixed-method research emerged as a third research method which involved the use of both quantitative and qualitative research methods for research problems that cannot be answered by a mono-method perspective. Both of the paradigms are important and useful for mixed method research (Johnson & Onwuegbuzie, 2004). Mixed-method researchers believe that this hybrid method can serve as a bridge by eliminating the distinction/contradiction between the two paradigms (Onwuegbuzie & Leech, 2005). However, it should be kept in mind that the mixed method has no purpose in finding solutions to the philosophical and methodological differences between quantitative and qualitative research. The mixed method has a pragmatist perspective that brings these two methods together to better respond to questions under investigation (Johnson & Onwuegbuzie, 2004). Therefore, the mixed method researcher is expected to master the two research methods. According to Johnson & Turner (2003), to master the strengths and weaknesses of quantitative and qualitative research methods is the basic principle of the mixed method. It is maintained that mixed method research based on pragmatist and transformative paradigms balances the limitations inherent in the nature of qualitative and quantitative methods (Firat, Yurdakul & Ersoy, 2014). It emerges as a good way to find answers to the research problem when a single research method is not sufficient. The idea that the combination of quantitative and qualitative methods, instead of using a single method, will provide a better understanding of the research problem is the basic assumption of mixed method research (Creswell, 2012).

The mixed method is now used increasingly in research studies in educational sciences. At the end of the 19th century, the first representatives of mixed-method researchers used different data collection and data analysis methods without mixing them with a methodological basis. Since the 1990s, the second generation (Brannen, Bryman, Creswell, Teddlie, Tashakkari et al.) has made a major contribution to the success of the mixed method research with their studies to demonstrate the taxonomy, jargon and application process of mixed method research (Bergman, 2011). After these studies, the mixed method started to be accepted as a separate approach with its own rules at the beginning of the new millennium. According to Creswell (Fetters & Molina-Azorin, 2017), mixed-method research has gained momentum in 2003 when the first manual on the mixed methodology of Tashakkori and Teddlie was published. Creswell also published the first edition of the Journal of Mixed Methods Research (2007), followed by the best practices by the National Institutes of Health, and finally, mixed method research standards for academic publications to be published by the APA in the upcoming period is also seen as a milestone for the development of this type of research.

When the literature is examined, it is seen that scientists who contributed to the development of mixed-method research only think that they should prefer this method when the research problem requires it. There are five main reasons for the mixed research method, which are presented by Greene, Caracelli and Graham (1989).

Triangulation: In the same research, it is the situation of testing the validity of the qualitative and quantitative data obtained independently from each other, and thus the validity of the findings.
Complementarity: It is the use of qualitative results in order to increase the interpretability of the findings after a quantitative research.
Development: There is a gradual use of quantitative and qualitative methods. First, the qualitative method is used and the results are intended to contribute to the development of the quantitative research process.
Initiation: It is the situation of giving the research study a new direction led by the inconsistencies resulted among the findings of the study at the end of using qualitative and quantitative methods within the scope of it.
Expansion: In the simplest sense, the scope of the research is expanded. The aim here is to examine the different phenomena belonging to the research.

Classification of Mixed Method Studies

An important issue for researchers who will use mixed method research is to determine the type of the mixed method appropriate for their study. The first comprehensive study on the classification of mixed method studies was carried out by Greene, Caracelli and Graham (1989). In this study, a classification system consisting of six types was developed by examining 57 articles.

According to Johnson and Onwuegbuzie (2004), a researcher using the mixed research method has to decide on the dominancy (which one will be more dominant, quantitative or qualitative?) and the time of implementation (will quantitative and qualitative methods be applied together or sequentially?). Therefore, the classification of mixed research types is made by taking these two points into consideration. Johnson and Onwuegbuzie (2004) identified nine types of mixed method in their classification based on the dominancy and the implementation time. This classification is shown in Figure 1. The researchers used the symbols developed by Morse (1991) during this classification process. According to this, the symbol "+" means that both qualitative and quantitative studies are carried out simultaneously, while the symbol "→" means that two studies are conducted in a sequential order. In addition, the use of capital letters refers to priority and weight in the research, and the lower case refers to just the opposite. A table prepared by Johnson and Onwuegbuzie using these symbols is shown in Figure 1.

		Time Order Decision	
		Concurrent	Sequential
Paragidm Emphasis Decision	**Equal Status**	QUAL + QUAN	QUAL → QUAN QUAN → QUAL
	Dominant Status	QUAL + quan QUAN + qual	QUAL → quan qual → QUAN QUAN → qual quan → QUAL

Figure 1: Classification of mixed method studies according to Johnson & Onwuegbuzie (2004)

According to Figure 1, there is a total of nine mixed methods to be classified according to the implementation time and dominancy. However, it is not expected that a researcher carrying out a mixed method study will always stick to this table. It is an important principle of the mixed method that the mixed method researcher is creative by adhering to the general principles.

In their study of the classification of mixed research methods, Leech and Onwuegbuzie (2009) benefited from the level of mixing in addition to the emphasis approach and application time. The table adapted from them is presented in Figure 2.
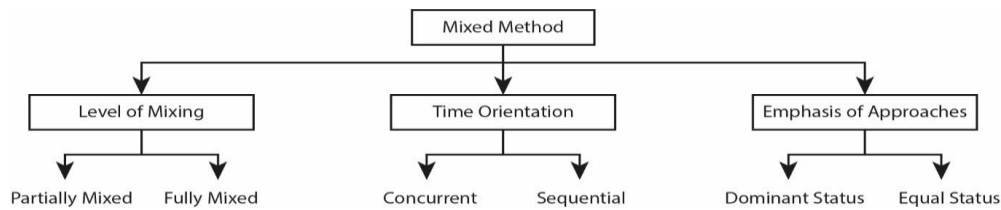
Figure 2: Classification of mixed method studies according to Leech & Onwuegbuzie (2009)

Creswell (2012), one of the prominent figures in the studies conducted on the classification of mixed-method studies, emphasized the importance of these four issues in order to determine the type of a mixed study:

1. *Deciding on which one of the quantitative and qualitative research methods will be prioritized or more dominant:* Which type of data is given more importance and emphasis is crucial. In some cases, however, quantitative and qualitative data sets might be equally important.
2. *The sequence of quantitative and qualitative data:* It is necessary to determine whether two data types are collected simultaneously or sequentially. If they are collected at different times, it should be noted which one was collected first.
3. *Data analysis process of the researcher:* It is the determination of whether the data are combined in a single analysis or the analyses are done separately.
4. *To determine in which part of the research the data is mixed:* The operation of mixing can be performed during data collection, analysis, or the interpretation phase. It is necessary to determine which of these four cases occurs.

Creswell (2012) maintains that the type of mixed method studies can be determined taking the issues above into consideration. Below are the six types of mixed-method proposed by him.

- The convergent parallel design
- The explanatory sequential design
- The exploratory sequential design
- The embedded design
- The transformative design
- The multiphase design

The first four types mentioned above are the most widely used types of mixed method research, while the use and consequent popularity of the last two methods are increasing day by day (Creswell & Plano Clark, 2011; cited in Creswell, 2012). The aforementioned six types of mixed method research and their principles are summarized in Figure 3.

Figure 3: Types of mixed method research according to Creswell (2012)

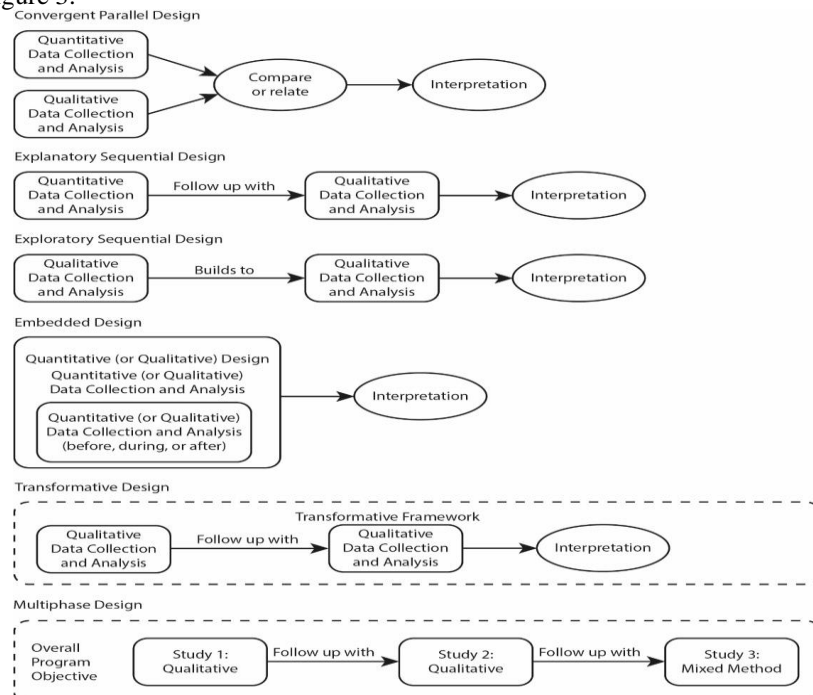The first four of the methods visualized in Figure 3 are the most widely used main types used in mixed research. These four methods are described in more detail below. The remaining two methods are basically based on the first four methods but have a more complex structure (Creswell, 2012):

The convergent parallel design
The purpose of this type of research is to collect and combine quantitative and qualitative data simultaneously and report the findings of the analysis to understand the research problem better. Based on this, it can be ensured that one of the collected data set can compensate the weaknesses of the other, finding a more comprehensive response to the research problem.

In parallel method, the researcher examines the situation whether the results are supporting each other or creating contradictions by analysing the quantitative and qualitative data sets separately. The direct comparison of the results from the two datasets in this way allows the data sources to be converged. Another important issue related to this method is that the researcher cares equally about quantitative and qualitative methods. In short, this method is mainly based on the simultaneous collection of quantitative and qualitative data sets, equal attention towards both methods and determination of the consistency-inconsistency status of the results derived from the analysis.

The explanatory sequential design

It may not be possible to collect quantitative and qualitative data at the same time due to the research problem. In such cases, it will be necessary to collect quantitative and qualitative data in order. In this type of research, firstly, quantitative data are collected. In the next step, the qualitative data collection process is started to explain the results obtained from the quantitative data.

In this research type, quantitative data collection and analysis process has priority. The data collection and analysis processes at each step with the qualitative data collected at the next stage are reported separately and respectively. The purpose of the qualitative data collection and analysis process is to present the results obtained from the quantitative data in a more pure and detailed manner. It is an important advantage of this method that the quantitative and qualitative parts are separated from each other in a clear way.

The exploratory sequential design

In the cases which requires the collection of quantitative and qualitative data sequentially, this is the method type in which the qualitative data is collected first and then the quantitative data is collected to explain the relationship among the qualitative data. This method can be used to discover a phenomenon, identify themes, and develop a data collection tool. In this kind of research, the qualitative method is emphasized more than the quantitative method. This might emerge as the most important and comprehensive problem in the research being open-ended or as a more detailed interpretation of the results of qualitative data analysis.

The embedded design

Although it shows similar characteristics with both parallel and sequential methods, it differs in terms of the purpose of use of either quantitative or qualitative method. The difference is that one of a set of quantitative or qualitative data collected simultaneously or sequentially is used to support the other. In the literature, the use of qualitative data is mostly intended to support the data obtained from quantitative research.

In the sequential use of the embedded method, in the first stage, due to the fact that the required information cannot be fully obtained from the basic source within the scope of the research problem, it is possible to utilize the secondary source. Combining the strengths of quantitative and qualitative methods is seen as a significant advantage of this type.

Mixed Method Research Process

There are several stages to follow in mixed method research. These stages are shaped according to the purpose of research, its sample and scope (Fırat, Yurdakul & Ersoy, 2014). Figure 4 shows the mixed method research process adapted from Johnson and Onwuegbuzie (2004).
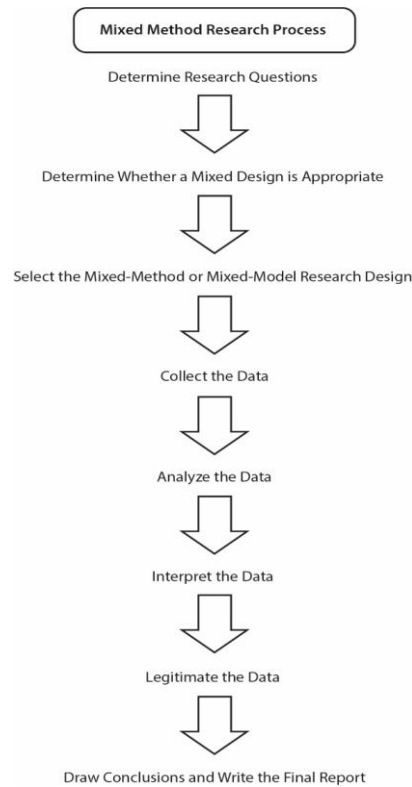
Figure 4: Stages of mixed method researches according to Johnson & Onwuegbuzie (2004)

When the above mixed method research process is examined, it is seen that the first step is to determine the research question which is the basis of the research. According to the structure of this research question, it is decided in the next stage whether the research requires the use of mixed methods. If it is decided to use a mixed method, the type to be used in the next step will need to be determined. After making this decision, the data will be collected and the analysis of these data will be carried out properly. After the interpretation of the results obtained at the end of the data analysis, final reporting will be carried out in detail. Researchers describe these stages in various models. As such, mixed method researches may begin with a purpose and at least one research question, while all other steps may vary. The steps taken by Creswell (2012), which describes the research process in mixed method in more detail, are shown below.
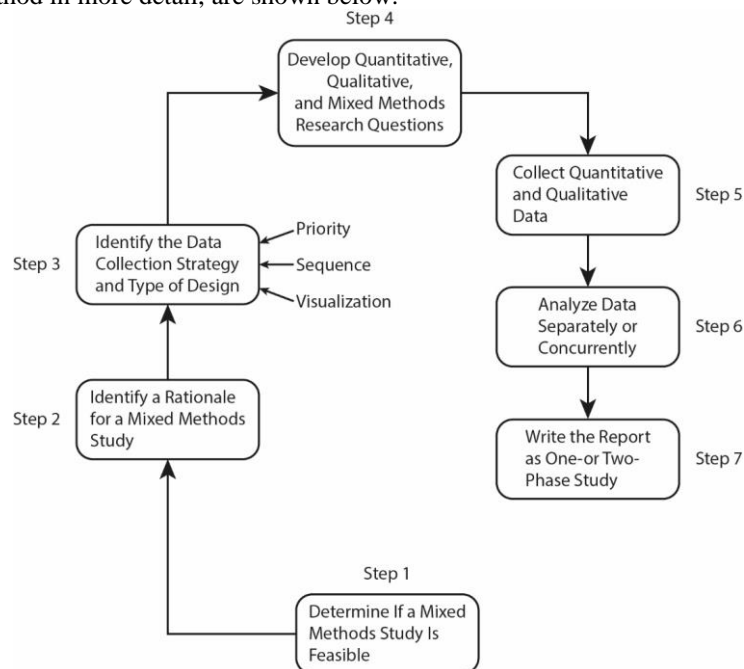

Figure 5: Stages of mixed method researches according to Creswell (2012)

Creswell examined the stages of mixed method research in seven steps. Accordingly, in the first step, a feasibility study should be done for mixed method research and it should be decided whether the method is applicable or not. If a mixed method can be applied, a justification should be made in the second step. The importance of this stage will be better understood when it is considered that mixed method research is appropriate for the situations required by the research problem. The third stage is mainly related with the presentation of the data collection strategy and the type of research design. At this stage, it is expected that the priority of the quantitative and qualitative data sets, in which order they will be collected and analyzed, are decided and the visualization of this process is made. Creswell states that the research problems should be formed only after the fourth stage. In this regard, it can be said that these stages that Creswell explained differed from the process mentioned in the previous figure. The next two steps involve the realization of the data collection and analysis process whose order and priority are decided in the third step. In the last step, reporting should be carried out according to the concurrent or sequential execution of the analyses.

The Use of Mixed Method Research in Educational Sciences

In the last two decades, the committed believers of mixed method research, even claiming that "mono-method research is the biggest threat to advancement of the social sciences" (Onwuegbuzie & Leech, 2005, p. 375), began to see this multiple perspective as a distinct advantage in educational research and superior to the ones employing either a quantitative or quantitative research design. Besides, these scholars also believed that mixed-method research could better enlighten the research matters in educational research which has historically faced with controversies in inquiring the complexities of educational phenomena (Walters, 2009). As mentioned before, one of the most important issues in mixed-method research is the fact that researchers should master the principles of both qualitative and quantitative data and how to mix them. For this reason, the first issue educational researchers must be aware and careful about is the notion of "principled mixing", that is aggregating the strengths of both methods and minimizing the weaknesses of both to better explore a research phenomenon in the field of educational sciences. In this part of the study, some hypothetical situations fitting to widely-used mixed method designs are presented to illustrate how this principled mixing can be ensured so that emerging scholars can benefit in fitting their research problems into mixed method research design.

Suppose that a researcher is interested in the welfare of teachers as a field of study and aims to examine the job burnout level of biology teachers in his/her context. Within the scope of the study, this researcher can use an instrument, for instance a burnout scale, to measure the burnout level of participant teachers and present some statistical findings. Moreover, at the same time, he/she can prepare some open-ended questions or conduct semi-structured interviews to collect qualitative data regarding the burnout of the participants. While mixing these two different methods in this case, if the researcher does not prioritize any of the methods; in other words, if these two data collection methods are equal in terms of their importance within the scope of the study, this case fits into the convergent parallel design. In this mixed-method design, "the researcher often gives equal priority to both quantitative and qualitative data and collects both data concurrently or simultaneously during the study" (Creswell, 2012, p. 540), and the critical point the researcher needs to be careful about is how to relate these two different data sets since they are collected and analysed separately. In this situation, the qualitative data (quotes or expressions from the participants) can be used as the confirmation or disconfirmation of the statistical findings while reporting the findings or discussion to ensure the criteria of principled mixing.

In another research case, a researcher in the field of English language teaching is planning to carry out a study focusing on foreign language speaking anxiety experienced by EFL learners and the main purpose is to reveal whether the participant learners experience this anxiety, what its level is and what the underlying factors causing this anxiety are. At this point, an initial step that the researcher has to take is to decide on the sequence and the priority of the data collection method because this preference plays a vital role in the mixed-method design the researcher has to follow throughout the study. If the researcher decides on applying a scale to reveal whether the participants feel anxious while speaking English, or to measure the level of it and then collect some qualitative data with the intention to present a better understanding of EFL speaking anxiety (such as the factors increasing their anxiety level or the role of teachers on this anxiety), such a research perspective fits into the explanatory sequential design which is regarded as "a straight forward mixed-method design to enrich the final findings considerably" (Dörnyei, 2007, p. 171). This design is also labelled as "perhaps the most popular form of mixed methods design in educational research" by Creswell (2012, p. 542) and believed to provide a better understanding of the research matter thanks to the elaboration with the qualitative phase. On the other hand, if the researcher first employs the qualitative data using interviews, reflection reports or open-ended questions to explore EFL speaking anxiety by creating themes or sub-elements related with it, construct a measurement and use it for the extension of qualitative findings, this perspective can be labelled as an exploratory sequential design which "involves the procedure of first gathering qualitative data to explore a phenomenon, and then collecting quantitative data to explain relationships found in the qualitative data" (Creswell, 2012, p.543). By

doing so, the researcher may not only explore EFL speaking anxiety as a distinct phenomenon and a field of study but also construct a research instrument that will guide its measurement.

In addition to these two hypothetical situations which might serve as easy-to-apply examples for further mixed-method studies in educational sciences, it should be noted that both data sets can be embedded into experimental studies (employing interviews at the beginning or at the end of the experiment) such as measuring the effectiveness of a teaching technique, or in longitudinal ones by conducting a series of data collection and analysis including both qualitative and quantitative elements. Whatever the purpose and the planned design are, the researchers in educational sciences need to be careful about two main points while embedding different types of data into their studies: The priority of data sets (qualitative or quantitative) and how these different data sets will feed each other (building a specific set on the other). These two issues will mainly guide the mixed-method researchers in employing the appropriate design to enlighten the research matter better.

Strengths and Weaknesses of Mixed Method Research

Mixed method research is considered to be a good solution when the research problem requires concurrent or sequential use of quantitative and qualitative methods. According to Bergman (2011), a study in which mixed method is applied correctly,

- has epistemological and ontological foundations.
- has a correctly-constructed research question and a theoretical framework.
- has a clear sampling method.
- has interpretations and methods to help quantitative and qualitative research.

In a study with all these features, it is thought that the research problem is more suitable for the use of the mixed method and it is more powerful than the studies employing a single research method. However, knowing the strengths and weaknesses of mixed-method research prior to the study will enable researchers to be prepared for possible problems that will interfere with the process and disrupt the research.

Johnson and Onwuegbuzie (2004) also emphasized that mixed method research has strengths and weaknesses. Accordingly, with the use of mixed method research, it is provided that the results obtained through a method are supported by another one, and this makes the research study stronger. Furthermore, because the researcher is not limited to a single research method, the mixed method can allow a broader and more comprehensive research problem to be answered. On the other hand, different types of mixed method research may have their own inherent limitations. The researcher can find solutions to a situation in which the method he / she uses is weak for research problem by emphasizing the strengths of another method that he / she will use. Thus, the points that might be overlooked when a single method is used can be understood and comprehended better.

Besides all these strengths, mixed method research also has some limitations or weaknesses. In particular, in cases where the quantitative and qualitative methods in the mixed method research are conducted simultaneously, a single researcher may find it difficult to carry out the process in a healthy way. In this regard, the researcher or the researcher group must have mastered both methodologies. If this requirement is not met, the method (quantitative or qualitative) processes in which the researcher or the researcher group has a higher competence will be treated correctly, while the execution of the other method processes will be disrupted. It should be kept in mind that mixed method research is more expensive and time consuming than the studies with a single research method. If the researchers' budget is limited or they do not have enough time to carry out the study, the situation will prevent the quality of the mixed method research process (Johnson & Onwuegbuzie, 2004).

In addition to those strengths and weaknesses, it is admitted that there are still some discussions on the mixed method terminology. The first one is related to the concept of "mixed". Some researchers believe that the methods used in mixed method research are more blending and combining, and therefore, the processes performed do not meet the concept of mixed. Another issue of discussion is the concept of triangulation. There are three cases associated with the use of this concept (Bergman, 2011):
- Accept triangulation as a sub-dimension of the hash method
- Accept the mixed method as a sub-dimension of triangulation
- Accepting these two concepts as identical-synonyms

First of all, it is necessary to mention the concept of triangulation and its use in research methodology. In a general sense, it is defined as the case of researchers' gathering and combining different data types related to the same phenomenon (Creswell, 2012). According to this, the most acceptable of the above three conditions for

triangulation is that triangulation is a type (sub-dimension) of the mixed method. Another controversial issue related to mixed method is whether the studies in which two different methods of the same research paradigm (quantitative + quantitative or qualitative + qualitative) are used can be called as mixed or not. According to Tashakkari and Teddlie (1998), it would be appropriate to name this type of research as multimethod (as cited in Bergman, 2011).

Mixed Method Research and Future Directions

Mixed-method research has increased its popularity in the 90s, and since the beginning of 2000s, it has started to be accepted as a third paradigm with the works of the scholars of the field. One of the important contributions to this field is the publication of the journal "Journal of Mixed Methods Research" in 2007. In the fourth issue of the journal in 2017, an article of the previous editors of the journal on the current situation and future of the field was published (Fetters & Molina-Azorin, 2017). In this study, previous editors such as Creswell, Tashakkori etc. shared their opinions on the most important role that should be taken by the researchers in the field, the challenges they might face and what kind of responsibilities researchers in the mixed method field should take.

According to this, the most important developments in the field are the emergence of a multidisciplinary and international community which is methodologically competent in mixed method research, the creation and active work of different working groups, the development of big data and the progress in the software world. When their opinions related to the controversial issues in the field are examined, Creswell maintained that the question of whether the mixed method is a methodology that includes analysis and interpretation starting from data collection, or a methodology covering all the research stages, is still the most important question that researchers answer differently. According to Freshwater, the difficulties and debates already involved in data integration, association, and aggregation in mixed-method research will become more troubled with the development of large data. However, Freshwater also believes this issue will be an opportunity related with the discussion on the implementation of the data.

The next topic concerns the recommendations of former editors for those who are already learning mixed method research. For Creswell, first, about 30 books written by experts about the mixed method should be read by new researchers. Another remarkable point according to Creswell is the increase in the number of researchers who consider themselves as experts in the mixed method research, but include independent analysis of quantitative and qualitative data in their research. Creswell argues that such research is a starting point for the mixed method, whereas in mixed-method research, the important thing is the integration of quantitative and qualitative data sets. Tashakkori recommends new researchers in the field to use the mixed method only when the research explicitly requires it. According to Tashakkori, the freedom of the investigator and the allowance for the emergence of his own design is an important advantage of the mixed method. Therefore, he stated that the researchers should not carry out their researches within the pre-determined limits and that each mixed method research may require a different method than the ones planned in the process.

Conclusion

Mixed-method research proposes to use quantitative and qualitative research methods in combination with a pragmatist perspective when the research problem requires. In such cases, the mixed method claims that deeper and richer answers can be found in the research problem than when a single research method is used. This innovative paradigm brought by mixed method requires new perspectives towards science and scientific knowledge.

From the 2000s onwards, studies related with its methodological basis have played an important role in making the method as a third paradigm (method or approach according to some scientists). From this process until now, especially for mixed method research, it is noteworthy that the studies differed significantly in terms of their classification, research process and so on according to the researcher. Researchers often state that they definitely did not determine the final lines and that the mixed method researcher should be creative since they believe that using their creativity in accordance with the purpose and development of the study is one of the important features of mixed method research.

Almost all of the methodologists whose studies have been examined in this article agree with the basics of mixed method research. However, there is a point on which all these scholars agree that it harms mixed method research: The researchers who do not fully understand the philosophy and purpose of the mixed method research conduct studies, which are not compatible with the purpose and philosophy of this paradigm. In other words, the use of quantitative and qualitative methods in the same research is not considered sufficient for the method to be

mixed. For this reason, written sources describing the mixed method should present content that will illuminate the researchers who are new in this field regarding the basic principles of this research paradigm instead of the classification of mixed method research, research stages, types, etc.

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Examination of Primary School Teachers' Environmental Literacy Levels

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Examination of Primary School Teachers' Environmental Literacy Levels[*]

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Abstract

In this study, it is aimed to determine the environmental literacy of primary school teachers in terms of some variables. In this study which employs a descriptive method, the study group is composed of 371 primary school teachers working in state primary schools in the province of Afyonkarahisar, Turkey in the academic year of 2016-2017. Environmental behavior scale, attitude scale towards environmental problems and environment knowledge test were used as data collection tools in the study. The data obtained were analyzed by using the SPSS 20 statistical program. Independent-samples t-test, one-way analysis of variance and simple linear correlation statistics were used in the analysis of results obtained from this study. As a result of the research, it can be argued that the environmental literacy levels of the primary school teachers are at moderate level. In addition, the findings of the research show that both primary school teachers' environment behavior levels and their environmental knowledge levels are moderate and their attitudes towards about environmental problems are high. Finally, it was concluded that there was a positive and significant relationship between attitude and behavior, a positive and significant relationship between attitude and knowledge, and a positive and significant relationship between knowledge and behavior.

Key words: Environmental literacy, Primary school teacher, Seniority, Educational status

Introduction

People have constantly affected the environment from past to present directly or indirectly. People have obtained the necessary needs for their life and have taken the opportunity to shape the environment with the knowledge and technology they have acquired during this time. As a result of this unconscious and uncontrolled shaping, environmental problems began to occur. Especially with the industrialization which has been developing rapidly since the second half of the 20th century, nature has been seen as an inexhaustible resource and the balance in nature has been damaged. Due to the deterioration of this balance, environmental problems such as global warming, pollution, loss of living diversity, reduction of agricultural areas, depletion of energy resources and drought have started to occur. Also, the last report of the Living Planet Report, published by the World Wide Fund for Nature (WWF) in 2016 confirms the emergence of these environmental problems. In the report, it is emphasized that the populations of natural life in the past decade have shown an alarming decrease by an average of 67 percent and it is becoming increasingly difficult to protect the environment with all its forms and functions (WWF, 2016).

People have started to pay attention to environmental problems, which were not included in the agenda of the people in the beginning, due to reasons such as reducing of the resources, the inability to obtain the requirements, the environmental pollution reaching to the level that endangers the human health; hence, solutions to these problems are being search. According to Yıldız, Sipahioğlu and Yılmaz (2000), especially after 1960s, the seriousness of the subject and the borderless of environmental problems have been understood; therefore, efforts shown have been increased to protect the environment and to resolve the existing problems at national and international level. For this purpose, many meetings were organized, reports were published and ways to protect the environment were tried to find. The first United Nations Conference on the Human Environment, which was conducted in Stockholm, Sweden in 1972, is important because it is the first evaluation on a global scale in this issue and the universality of environmental problems is accepted at this conference. Moreover, 1979 the First World Climate Conference, 1990 the Second World Climate Conference, 1992 the Rio

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Summit and the Second United Nations Conference on Environment and Development are other important meetings on environment and ecology.

Although it is important for governments and international organizations to prevent environmental problems, it is the duty of all humanity. Due to the universality of environmental problems, they affect all individuals without discriminating language, religion, race or color. According to Erten (2003), environmental problems will continue to exist unless people's usual thinking and behavior change. Therefore, a fundamental change in people's understanding of the environment is needed. This change is only achieved through an effective and efficient environmental education.

Kıyıcı (2009) stated that environmental education is important to increase awareness levels of people about environment, to increase positive attitudes and behaviors of people about environment, to protect the natural life and to restore the damaged environment. According to Gough (2002), environmental education is a form of education that works against the degradation of the environment and the reduction of the quality of life and takes these issues to the center of education. The roots of environmental education are based on the education of conservation of nature and natural resources. Peyton, Campa, Winterstein, Peyton and Peyton (1995) claimed that in the course of time, environmental education, rather than informing all individuals about environmental education, aimed to educate enthusiastic and talented participants in environmental management. As Mangas, Martinez and Pedauyé (1997) indicated, the main objective of environmental education is to evaluate environmental problems, find solutions to the problems identified, and create positive behaviors towards the environment. Environmental education has an important role since all members of society have attitudes, values, behaviors and necessary information about environmental protection. In summary, the main purpose of environmental education is to educate individuals with respect to environmental literacy.

McBeth and Volk (2010) stated that the earliest expression of environmental literacy was in an article by Charles Roth (1968) in Massachusetts Audubon. Todt (1995) emphasized that environmental literacy was revealed by politicians during explaining the purpose of environmental education. As cited Liu et al. (2015), although the term "environmental literacy" is used as the most important objective for environmental education, little agreement has been reached between educators on the definition of terms. Meuth (2010) mentions that environmental literacy includes knowledge, skills and motivation to contribute to environmental needs and sustainable development. In recent years, environmental literacy is thought to be the most important component of environmental education (Sarıbaş, Teksoz and Ertepinar, 2013: 3664). There is a profound but remarkable distinction between environmental education and environmental literacy. While environmental education is based on the process, the objectives of environmental literacy are based on more results (Karimzadegan and Meiboudi, 2012: 405). Achieving environmental literacy is an objective that requires extensive effort as well as traditional education. Owens (2000) states that environmental literacy supports broad-based environmental education, including knowledge, attitudes, skills and active participation in society.

There is no consensus on the components of environmental literacy. It is seen that the researchers listed different numbers of components. According to Roth (1992: 9), environmental literacy has six components: environmental sensitivity, knowledge, skills, attitudes and values, individual responsibility and active participation. By combining these six components, Roth has addressed environmental literacy in four parts: knowledge, skills, affective domain and behavior. Hsu (1997: 34-35) listed the components of environmental literacy as knowledge, sensation, skill and behavior. On the other hand, it is generally accepted that environmental literacy consists of three elements: knowledge, attitude and behavior (Johnson, Smith ve Nicholas, 2000; Kibert, 2000; Murphy, 2002; White, 2006).

Considering the importance of environmental education in the creation of environmental awareness and prevention of environmental problems, it is necessary to start this education during the early ages for all individuals. In addition, environment education starting in the family continues at school. Mosothwane (1992) states that the introduction of environmental education into schools early provides attitudes towards a quality environment, that children learn especially by observing adult behaviors, that young children are in a very sensitive stage in creating learning and attitudes; therefore, instead of trying to change the attitudes of adults, it is easier to develop correct environmental attitudes of children at an early age. Considering the importance of early ages in the formation of attitudes, values and behaviors, the importance of primary school teachers that children encounter in their school life after their families is better understood. The qualifications of teachers who will provide environmental education in schools will determine the effectiveness of education. For elementary school children, the primary school teacher is one of the people that children take the most models. Hence, it is important for primary school teachers to be environmentally friendly, environmentally conscious and environmentally friendly, shortly environmental literate individuals for the formation of the child's environment-

oriented personality. Therefore, it is necessary to determine the level of environmental literacy of the primary school teachers and to maximize this level.

Research purpose

The aim of this study is to investigate the environmental literacy of primary school teachers in terms of some variables. For this purpose, the environmental literacy levels of teachers were determined using the Environmental Behavior Scale, the Attitude Scale Towards Environmental Problems and the Environmental Knowledge Test. Since environmental literacy has been dealt with in three dimensions as knowledge, attitude and behavior by many researchers (Johnson, Smith & Nicholas, 2000; Kibert, 2000; Murphy, 2002; White, 2006), these three dimensions have been examined in this study. In addition, the differentiation of environmental literacy levels according to gender, seniority, working place, education level, membership to environmental non-governmental organization and environmental project work was investigate. Answer is searched in the research for the following sub-questions:

- What is the level of environmental literacy of primary school teachers?
- Is there a significant difference in environmental literacy levels of primary school teachers according to gender, seniority, place of residence, educational status, membership of environmental non-governmental organizations, and whether or not environmental project work is carried out?
- Is there a significant relationship between environmental literacy components like behavior, attitude, knowledge?

Significance of Research

It is considered important to investigate these questions because it is important to raise environmental literacy generations with an effective environmental education in order to prevent the increasing environmental problems. In order to change the ongoing understanding of the environment, the importance of environmental education is increasing in order to raise environmental literacy for individuals who are sensitive to environmental problems, have environmental problems and can work to solve environmental problems. To be able to provide environmental education suitable for this purpose is only possible with teachers who have environmental literacy. Considering the importance of early childhood education, the fact that primary school teachers who play a significant role in shaping the personality and thoughts of children is an environmental literate will be an important determinant of the attitudes and behaviors of children who will have a say about the future of environment in the future. When the literature on the subject is reviewed, it is seen that many studies (Altınöz, 2010; Cheng and Wu, 2015; Dibgy, 2010; Esa, 2010; Timur, 2011; Varışlı, 2009+) have been done in the field of environmental literacy. When we investigate these studies in which environmental literacy is considered, it is generally seen that the components of knowledge, attitude, behavior and perception of literacy are examined separately; however, it is seen that environmental literacy as a whole is not examined according to some variables. In this study, environmental literacy of the class teachers is considered as a whole and examined in terms of various variables.

Methods

Research Model

This study, which aims to examine the environmental literacy of primary school teachers in terms of some variables, is a descriptive study in the survey model. Karasar (2015, p. 79) indicated that survey models, generally, are arrangements on a whole group or sample taken from the population in order to make a general judgment about the population. In addition, Karasar (2015, p. 77) states that the survey models are research approaches aimed at describing a situation that exists in the past or the present, as they exist.

Participants

The population of the study consists of primary school teachers working in primary schools in Afyonkarahisar province in 2016-2017 academic year. The sample group of the study is composed of 371 class teachers working in state primary schools in the province of Afyonkarahisar in the academic year of 2016-2017. The study group was determined according to maximum diversity sampling from maximum variation sampling methods.

Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz and Demirel (2014, p. 90) stated that the maximum variation is determined by determining the different situations related to the problem examined in the population and working on these situations. In determining the teachers to be reached, the diversity was aimed by choosing schools with different socio-economic characteristics. The information about the primary school teachers who compose of sample of research is shown in Table 1.

Table 1. Distribution of the study group by demographic variables

Variable		F	%
Gender	Female	197	53.1
	Male	174	46.9
	Total	371	100.0
Vocational Seniority	0-5 years	109	29.4
	6-10 years	96	25.9
	11-15 years	55	14.8
	16-20 years	46	12.4
	21 years and above	65	17.5
	Total	371	100.0
Working Place	Province	135	36.4
	District	121	32.6
	Town-Village	115	31.0
	Total	371	100.0
Education	Bachelor's	323	87.1
	Master's	48	12.9
	Total	371	100.0
NGO Membership	Yes	34	9.2
	No	337	90.8
	Total	371	100.0
Project	Yes	61	16.4
	No	310	83.6
	Total	371	100.0

As seen in Table 1, 53.1% of the teachers who participated in the research were female and 46.9% were male.

Data Collection Tools

In order to determine literacy levels of teachers, Environmental Behavior Scale, Attitude Scale Towards Environmental Problems and Environmental Knowledge Test were used. Specifying the statement that the data collection tool will be used for the purposes of confidentiality and academic purposes, various questions like gender, seniority, work place, educational status, status of membership to environmental NGOs and environmental studies were asked in order to learn the demographic information of the participants. Below is information about the scales used in the research.

Environmental Behavior Scale: Timur and Yılmaz (2013) conducted the Turkish adaptation study of the environmental behavior scale developed by Goldman, Yavetz and Pe'er (2006). The scale was applied to 208 science and technology teachers to determine its validity and reliability. The Cronbach Alpha reliability coefficient was found to be 85 for the scale consisting of 20 items in five Likert type (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = General, 5 = Always). The obtained results showed the scale can also be used in Turkey (Timur & Yılmaz, 2013). In our study, the Cronbach alpha reliability coefficient of the test was found to be 0.74.

Attitude Scale for Environmental Problems: The scale was developed by Aksu (2009). The scale was applied to 100 science and technology classroom teachers to determine its validity and reliability. Factor analysis was performed to investigate the form validity. As a result of the analyzes, attitude scale that consist of a total of 11 items, with load values ranging from 0,433 to 0,747 and collected under one factor, were obtained. The Likert-type attitude scale was rated 5-4-3-2-1 for positive expressions and 1-2-3-4-5 for negative expressions. High score indicates positive attitude towards environmental problems, low score indicates negative attitude towards environmental problems. The lowest score that can be taken from the scale is 11 and the highest score is 55 (Aksu, 2009). In our study, the Cronbach alpha reliability coefficient of the test was found to be 0.84.

Environmental Knowledge Test: Test is developed by Altinoz (2010). Initially, a pilot study was carried out with 115 teacher candidates for the reliability study consisting of 20-items and as a result of the analysis, final version was created by making necessary adjustments. The final version of the environmental knowledge test consists of 15 multiple choice items. In the test, each item has five options and the value of each problem is set to 1 point. The maximum score that can be taken from this test is 15 and the minimum score is 0. The reliability coefficient Cronbach's alpha coefficient of the Environmental Knowledge Test, which was analyzed, was calculated as 0.63. (Altınöz, 2010). In our study, the Cronbach alpha reliability coefficient of the test was found to be 0.68.

Data Analysis

The data obtained from the study were analyzed with SPSS 20.0 (Statistical Package for Social Science for Staff Computer). In order to make the data more comprehensible, tables were created and the data in the tables were interpreted. The normality of data distribution was examined with Skewness and Kurtosis values. The coefficient of skewness and kurtosis of the data in the study is between +1 and -1 values. As a general rule, Morgan, Leech, Gloeckner and Barrett (2004, p. 49) propose to accept the + 1, -1 values of the skewness coefficient as the normal distribution measure. In the study, parametric statistics based on the normal distribution were made as one of the prerequisites. The total scores of teachers from literacy variable were calculated. The t-test was used for unrelated groups in order to determine whether the scores of the teachers of environmental literacy vary according to gender, educational status, membership of environmental NGOs and the environment of the project. One-way analysis of variance (ANOVA) test was used to determine whether teachers' scores in environmental literacy were statistically significant according to seniority and workplace variables. Levene test results were obtained for the equality of the variance of the groups and no significant difference was found between the variances of the groups. In order to see that the significant differences in the ANOVA test are among between which groups, Scheffe test was preferred because of the equality of variances and the difference in the number of samples in the groups. Sipahi, Yurtkoru and Çinko (2008: 128) emphasized that when the assumption is made that the group variances are equal, Scheffe test is preferred if there is a difference between the number of samples in the groups. In addition, a simple linear correlation test (Pearson Product-Moment Correlation) was applied to determine whether there is a significant relationship between environmental behavior, environmental attitudes and environmental knowledge scores which are components of environmental literacy.

In order to determine environmental literacy levels of teachers, environmental behavior scale, attitude scale towards environmental problems and environmental knowledge test were utilized. Firstly, the average of the total scores obtained by the teachers in these 3 scales was calculated and their levels were determined. Then, environmental literacy levels of teachers were determined using a method developed by Mcbeth, Hungerford, Marcinkowski, Volk and Meyers (2008). According to this method, a standardized maximum score (60) that teachers will take from all scales is determined, then according to this standardized score multipliers have been determined in order to calculate maximum scores that can be taken from each scale.

The multiplier values used to transform teachers' raw score to corrected score in determining environmental literacy levels are shown in Table 2.

Table 2. Multiplier values and maximum scores

Environmental Literacy components	Number of questions	Rating Range	Multiplier	Maximum Points that can be taken
Behaviour	20	20-100	0.6	60
Attitude	11	11-55	1.09	60
Knowledge	15	0-15	4.0	60
Total Points	46	31-170		180

As can be seen in Table 2, the highest score that can be taken from each scale is 60. According to this, in order that a teacher from the environmental behavior scale consisting of 20 items can take full points (60), the correct number must be multiplied by a factor of 0.6. Additionally, in order that a teacher from the attitude scale consisting of 11 items can take full points (60), the correct number must be multiplied by a factor of 1.09. Furthermore, in order that a teacher from the environmental knowledge test consisting of 11 items can take full points (60), the correct number must be multiplied by a factor of 4.0. According to the standardized score, the highest environmental literacy level is 180 points and the lowest environmental literacy level is 24 points. Then,

the environmental literacy level is divided into three categories that are low, medium, high in between the lowest and the highest point. Accordingly, between 24-76 points show a low level of environmental literacy, between 77-128 show the medium level of environmental literacy, between 129-180 points show high level of environmental literacy.

In statistical studies, when the difference between the groups is examined, the significance level is accepted as 0.05. It is stated that in the case of $p < 0.05$ there is a significant difference between the groups and in the case of $p > 0.05$ there is no significant difference between the groups. In addition, the results obtained from data collection tools are shown in the tables and interpreted accordingly.

Results

In this chapter, environmental behaviors, environmental attitudes, environmental knowledge and environmental literacy levels of teachers were determined based on the data obtained from data collection tool. In addition, with the help of these data, the answers to the research questions were stated.

Findings on Teachers' Environmental Literacy Levels

The model developed by McBeth et al. (2008) was applied to determine the environmental literacy levels of teachers. According to this model, environmental literacy level is evaluated in 3 categories (low, medium, high). Teachers' environmental literacy levels are shown in Table 3 based on this model.

Table 3. Environmental literacy levels of teachers

		Low	Medium	High	$\overline{X}$	S
Behaviour	Range	12-27	28-44	45-60	43.01	6.60
	f	5	215	151		
	%	1.3	58.0	40.7		
Attitude	Range	12-27	28-44	45-60	48.70	6.96
	f	0	110	261		
	%	0	29.6	70.4		
Knowledge	Range	0-20	21-40	41-60	34.18	11.21
	f	54	222	95		
	%	14.6	59.8	25.6		
Total Points	Range	24-75	76-128	129-180	125.90	18.70
	f	3	197	171		
	%	0.8	53.1	46.1		

As shown in Table 3, environmental behavior, environmental attitudes and environmental knowledge scales were used to determine teachers' environmental literacy level. The level of teachers, the average and standard deviation of the total points received by teachers from these scales were determined separately. The maximum and minimum scores that teachers can take from these three scales are divided into three categories based on the method developed by McBeth et al. (2008). The highest score that teachers can get from these three scales is 180. According to the standardized score, it is determined that between 24-75 points are low, between 76-128 points are medium and between 129-180 points are high environmental literacy level. Accordingly, the ratio of teachers in the range of 24-75 points was 0.8% (3), the ratio of teachers in the range of 76-128 points was 53.1% (197) and the ratio of teachers in the range of 129-180 points was 46.1% (171). The mean score of the teachers in three scales was calculated as 125.90 and the standard deviation was calculated as 18.70. According to this value, it can be said that teachers' level of environmental literacy is moderate.

Findings on the Difference Between the Levels of Environmental Literacy Based on the Gender of Teachers

Independent samples t-test were performed in order to determine whether the average scores of teachers' scores on the environmental literacy scale differ according to gender are shown in Table 4 below.

Table 4. Difference between environmental literacy levels by gender

	Gender	N	$\overline{X}$	S	sd	t	P
Environmental	Female	197	127.26	17.50	369	1.494	0.136
Literacy	Male	174	124.35	19.90			

As can be seen in Table 4, the average environmental literacy score of female teachers ($\overline{X}$=127.26) is higher than the average score of environmental literacy of male teachers ($\overline{X}$=124.35). However, according to the results of the analysis, teachers' environmental literacy levels did not show a significant difference according to their gender (p>0.05). According to this finding, it can be said that teachers' environmental literacy levels did not change according to gender.

Findings on the Difference Between Environmental Literacy Levels of Teachers based on their Seniorities

According to the seniority of the teachers, the information on the scores obtained from the environmental literacy scale is shown in Table 5.

Table 5. Environmental literacy according to the seniorities

Group	Seniority	N	$\overline{X}$	S
1	0-5 year	109	121.90	20.13
2	6-10 year	96	124.80	16.84
3	11-15 year	55	131.31	20.52
4	16-20 year	46	126.67	16.99
5	21 and above year	65	129.07	17.12

As shown in Table 5, the average of teachers with 0-5 years of professional experience in terms of environmental literacy scores is the lowest ($\overline{X}$=121.90) and the average of teachers with a professional seniority of 11-15 years is highest ($\overline{X}$=131.31).The results of the one-way analysis of variance that aimed to determine whether the average of scores that are taken by the teachers on the environmental literacy scale differ according to their seniority are shown in Table 6 below.

Table 6. Difference between environmental literacy according to seniorities

Source of Variance	Total of Squares	sd	Average of Squares	F	P	Mean Difference
Between Groups	4150.267	4	1037.567			
Within Groups	125253.314	366	342.222	3.032	0.018	1-2
Total	129403.581	370				

As seen in Table 6, a statistically significant difference was observed between at least two of the environmental literacy scores of teachers according to their seniority [F (4-366) = 3.03, p<0.05]. The effect size calculated by the test result (n² = 0.03) indicates that this difference is low. As a result of the multiple comparison test, it is seen that the significant difference is between the teachers having 0-5 years professional seniority and the teachers who have vocational seniority between 11-15 years. According to this finding, it can be said that the teachers who have vocational seniority between 11-15 years have higher environmental literacy levels than the teachers who have vocational seniority between 0-5 years.

Findings Related to the Difference Between the Levels of Environmental Literacy Acording to the Teachers' Working Place

Information on the scores of the teachers on the environmental literacy scale according to the working place is given in Table 7 below.

Table 7. Environmental literacy scores according to the working place

Group	Settlement	N	$\overline{X}$	S
1	Province	135	129.40	16.68
2	District	121	125.82	18.44
3	Town-Village	115	121.87	20.46

As can be seen in Table 7, the average of the teachers working in the provincial center with respect to environmental literacy scores ($\overline{X}$=129.40) is the highest and the average of the teachers working in the district center ($\overline{X}$=125.82) is the lowest. The results of the one-way analysis of variance conducted in order to determine whether the average scores of the teachers' scores on the environmental literacy scale differ according to residential area are shown in Table 8 below.

Table 8. Difference between environmental literacy according to working place

Source of Variance	Total of Squares	sd	Average of Squares	F	P	Mean Difference
Between Groups	3520.823	2	1760.412			
Within Groups	125882.758	368	342.073	5.146	0.006	1-3
Total	129403.581	370				

As seen in Table 8, a statistically significant difference was observed between at least two of the scores of the teachers on the environmental literacy scale according to the working place [F (2-368) = 5.15, p<0.05]. The effect size (n² = 0.02) of the test result shows that this difference is low. As a result of the multiple comparison test, significant difference was found between the teachers working in the city center and the teachers working in the town or village. According to this finding, it can be said that the teachers who work in the provincial center have higher environmental literacy levels than the teachers working in towns or villages.

Findings on the Difference Between the Levels of Environmental Literacy According to the Educational Status of Teachers

Independent samples t-test was conducted in order to determine whether the mean scores of the teachers on the environmental literacy scale differ according to the educational status are shown in Table 9 below.

Table 9. Difference between environmental literacy according to the educational status

	Education	N	$\overline{X}$	S	sd	t	p
Environmental Literacy	Bachelor's	323	125.93	17.26	53.01	.064	.949
	Post graduate education	48	125.68	26.66			

As can be seen in Table 9, the average of teachers who has bachelor's degree ($\overline{X}$=125.93) is higher than the average of teachers who graduate from post graduate education ($\overline{X}$=125.68) in terms of environmental literacy scores. However, according to the results of the analysis, teachers' environmental literacy levels did not show a significant difference according to their educational status (p>0.05). According to this finding, it can be said that teachers' environmental literacy levels did not change according to their educational status.

Findings Regarding the Difference Between the Levels of Environmental Literacy According to Teachers' Membership to the Environmental Non-Governmental Organization

Independent samples t-test was conducted in order to determine whether the average scores of the teachers on the environmental literacy scale differ according to the membership status of the non-governmental organization are shown in Table 10 below.

Table 10. Difference between environmental literacy according to membership to the NGO

	Membership	N	$\overline{X}$	S	sd	t	p
Environmental Literacy	Member	34	129.83	19.49	369	1.287	0.199
	Non-member	337	125.50	18.60			

As it is seen in Table 10, the average of the teachers who are a member of an organization ($\overline{X}$=129.83) is higher than the average of non-member teachers ($\overline{X}$=125.50) according to the membership status of the environmental Non-governmental organization in terms of environmental literacy scores. However, according to the results of the analysis, the environmental literacy levels of the teachers did not show a significant difference according to the membership status of the environmental Non-governmental organization (p>0.05). According to this finding, it can be said that teachers' environmental literacy levels did not change according to the membership status of non-governmental organizations.

Findings Regarding the Difference Between Environmental Literacy Levels According to the Situation of Doing Project Studies on Environmental Education of Teachers

Independent samples t-test was carried out in order to determine whether the average scores of the teachers on the environmental literacy scale differ according to the environmental project studies are shown in Table 11 below.

Table 11. Difference between environmental literacy according to the situation of doing project

	Project	N	$\overline{X}$	S	Sd	t	p
Environmental	Yes	62	134.92	18.32	369	4.214	0.000
Literacy	No	309	124.12	18.28			

As seen in Table 11, it is seen that there is a significant difference [t(369)=4.21, p<0.05] between the average of the teachers doing project studies on environmental education ($\overline{X}$=134.92) and the average of the teachers who do not ($\overline{X}$=124.12). According to this finding, it can be said that doing environmental project work has a significant effect on environmental behavior.

Findings about the Relationship Between Environmental Literacy Components (Behavior, Attitude, Knowledge)

The results of the Linear Correlation analysis that was conducted to determine whether the relationship between the scales used to determine the environmental literacy levels of teachers (environmental behavior, attitude towards environment problems and environment knowledge) are significant are shown in Table 12 below.

Table 12. The relationship between environmental literacy components

Parameters		Attitude	Behaviour	Knowledge
Attitude	r	1	.387**	.420**
	p		.000	.000
	N	371	371	371
Behaviour	r	.387**	1	.235**
	p	.000		.000
	N	371	371	371
Knowledge	r	.420**	.235**	1
	p	.000	.000	
	N	371	371	371

** Significance at correlation 0.01 level (bidirectional)

As seen in Table 12, there is a positive, medium-level and significant relationship (r=.387, p<.01) between environmental attitude and environmental behavior. Again, there is a positive and medium level relationship (r = .420, p<.01) between the environmental attitude scale and the environmental knowledge scale. In addition, there is a positive and low-level relationship (r=.235, p<.01) between the environmental attitude scale and the environmental knowledge scale.

Discussion

In order to determine the environmental literacy level of teachers, environmental behavior scale, attitude scale towards environmental problems and environmental knowledge tests were utilized. Accordingly, teachers' environmental behaviors and environmental knowledge were at a moderate level and their attitudes towards environmental problems were found to be high. At the end of the study, it was determined that the teachers' level of environmental literacy was moderate, that is, not at the desired level. When the literature is reviewed, there are very a few studies that aim to directly determine the environmental literacy of teachers. Cutter (2002) stated that primary school teachers have low environmental literacy. Similarly, Owens (2000) in his study with urban secondary school teachers in the United States concluded that teachers' environmental literacy is low. Altınöz (2010), Karatekin (2011), Kayalı (2018), Kışoğlu (2009) and Timur (2011) concluded that environmental literacy of teacher candidates is medium level. In addition, Erdoğan (2009) determined that the 5th grade students in the primary school have medium level of environmental literacy. Güler (2013) also stated that the 8th

grade primary school have medium level of environmental literacy. Moreover, Yavetz, Goldman and Pe'er (2009) concluded that students' environmental literacy is insufficient.

Although the attitudes of teachers towards environmental problems are high, environmental behaviors and environmental knowledge at an intermediate level can account for the reason of environmental literacy's being medium level. Considering that the attitudes of teachers on a specific subject affect the quality and permanence of the subject taught, it can be considered positive that their attitudes towards environmental problems are high. However, it can be said that the study findings show that teachers have difficulty in transforming these positive attitudes into behavior. Studies show that high attitudes towards the environment and high environmental knowledge are not sufficient for people who show harmful behaviors to the environment (Erten, 2005). Morrone, Mancl and Carr'a(2001) stated that a literate person is someone who is not just equipped with knowledge but also who can combine knowledge with values that lead to actions. Although the attitudes of the teachers who will raise the environmentalists of the future are at a high level, the environmental knowledge is not at the desired level yet. It can be shown that the reason for this is the inadequate environmental education of teachers during their undergraduate education. As a matter of fact, there are studies supporting this view in the literature. In the studies of Tuncer Teksöz, Boone, Yılmaz Tuzun and Öztekin (2014), teacher candidates do not have an acceptable level of knowledge; in other words, they have determined that they are not capable of identifying, analyzing, examination and evaluating environmental problems and the relationships between natural and social systems. Maskan, Efe, Gönen and Baran (2006) state that the the majority of prospective teachers in higher education institutions in Turkey have no adequate environmental education courses and said that the content of existing courses is not designed to improve the good behavior about the environment. As a result of Aydemir's (2007) study, it was found that teachers did not take an adequate environmental education in their higher education and after graduation. Teksöz, Şahin and Ertepinar (2010) concluded that the environmental knowledge of the prospective teachers is insufficient and explained this situation with the insufficiency of the environmental education. In addition, Erdoğan (2009) stated that approximately 23% of the participants were insufficient in terms of environmental knowledge, and he interpreted this as an alarming result, and recommended teacher training programs to be reviewed and improved with providing more time for environmental education with a comprehensive curriculum. Moreover, it has been demonstrated that a sufficient and qualified environmental education has led to a positive increase in attitudes and behaviors at the level of knowledge, thus to improve environmental literacy (Bradley, Waliczek & Zajicek 1999; Deniş & Genç, 2007; Güven, 2011; Kızıl, 2012; Yavuz, 2006).

When the environmental literacy of the teachers was investigated in terms of various variables, it was found that there was no significant difference according to gender, education status and membership of non-governmental organization related to environment. However, it was found that there was a significant difference in terms of environmental literacy between teachers who have vocational seniority between 11-15 years and teachers who have a seniority between 0 and 5 years. This difference is in favor of teachers with a professional seniority of 11-15 years. In addition, it was found that there was a significant difference between the teachers working in the province center and the teachers working in the town or village in terms of environmental literacy. This difference is in favor of teachers working in the city center. The reason for the high environmental literacy scores of teachers living in the province may be that environmental problems are felt more in cities than villages. Moreover, it was found that there was a significant difference between the teachers working on the project and the teachers who did not carry out project work about environmental in terms of environmental literacy. This difference is in favor of teachers who make project work. It is expected that the project studies on the subject will have a positive effect on teachers' environmental literacy. When the related literature is examined, it is seen that the number of studies that investigate environmental literacy as a whole is very low, rather studies which investigate the components of environmental literacy separately are preferred. Looking at these few studies, Owen (2000), in his study with secondary school teachers, found that male teachers had significantly higher scores in terms of total environmental literacy compared to female teachers; however, according to seniority, teachers did not find a significant difference. Kahyaoğlu (2011), in his study with Science and Technology teachers, stated that educational level and location differences do not have any effect on environmental literacy, but that gender and seniority have a significant effect on environmental literacy.

Looking at the relationship between scores obtained from environmental literacy subscales, it was seen that there was a positive, moderate and significant relationship between attitude and behavior. Hsu and Roth (1998); Kaiser, Wolfing and Fuhrer (1999); Negev, Sagy, Garb, Salzberg and Tal (2008); Yavetz, Goldman and Pe'er (2009) have found a positive, moderate and significant relationship between attitudes and behaviors in their research with different study groups. Bilim (2010) and Timur (2011) found a positive, low level and significant relationship. Chu et al. (2007) found a high level, positive and significant relationship. On the other hand, Esa (2010) and Uzun (2007) found no significant relationship. There was a moderate, positive and significant

relationship between attitude and knowledge. Esa (2010); Kaiser et al. (1999); Negev et al. (2008); Pe'er, Goldman and Yavetz (2007) found a similar result. Altınöz (2010); Güler (2013); Karatekin (2011); Kibert (2000); Timur (2011); Yavetz, Goldman and Pe'er (2009) found a positive, low level and significant relationship. There was a positive, low level and significant relationship between knowledge and behavior. Altınöz (2010); Chu et al. (2007) and Esa (2010) found a similar result. Bilim (2010), Hsu and Roth (1998) found a positive, moderate level and significant relationship. However, Karatekin (2011) came up with a negative and low-level relationship. On the other hand, Kaiser et al. (1999); Kibert (2000); Negev et al. (2008); Pe'er, Goldman and Yavetz (2007); Timur (2011); Uzun (2007); Yavetz, Goldman and Pe'er (2009) did not find a significant relationship between knowledge and behavior.

Teachers' knowledge about the environment effect on their environmental attitudes and environmental behaviours positively. In addition, the positive attitudes of the teachers towards the environment can affect their environmental behaviors positively. Makki et al. (2003) stated that environmental decisions and behaviors are influenced by environmental knowledge and attitudes. The attitude of an individual who has knowledge about environmental problems and responsible behaviors towards the environment are different from those who do not have any knowledge. There are theoretical and empirical reasons to support this relationship, although many obstacles arising from the difference between environmental attitudes and pro-environmental behavior have been adopted (Turaga, Howarth & Borsuk 2010). Atasoy and Ertürk (2008) mentioned that based on the definition that attitude is an internal tendency that regularly determines the thoughts, feelings and behaviors of an individual about an object, there is a certain connection between thoughts, feelings and behaviors. Aksu (2009) stated that the stronger the attitude is, the more consistent its relationship with behavior is.

Considering the results obtained in the research, the following suggestions can be made:

- It is important to carry out studies to improve the teachers' environmental literacy levels. In this sense, it can be provided that teachers can take courses related to environmental literacy during their university education or the quality of existing courses can be increased. In addition, in-service environmental education courses can be organized for the teachers.
- Although the attitudes of teachers towards environmental problems are high, it is determined that environmental knowledge and environmental behaviors of teachers are moderate. In order to increase the environmental knowledge of the teachers and to enable them to transform their existing attitudes into behavior, practical in-service trainings can be given in which balanced knowledge, attitude and behavior dimensions are considered.
- As the findings of the study indicate that the attitude and environmental behavior scores of the teachers who work on environmental projects are significantly higher than those who do not work on environmental projects, it is important to ensure that teachers do projects or participate in projects about environment. For this purpose, teachers can be encouraged and rewarded. In addition, environmental projects organized within a program can be provided for them.
- This study is limited to variables such as gender, seniority, working place, educational status, membership to the non-governmental organization and doing project about environment. Investigating the attitudes of teachers towards environmental problems in terms of different variables can be another study to be conducted.

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The Relations between Student Cynicism and Students' Life Satisfaction

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Abstract

The purpose of this study is to determine the relationship between student cynicism and students' life satisfaction. This study is in correlational survey model. The sample of the study consists of 554 Turkish high school students, who were selected by simple random sampling method. Findings show that female students have more cynical attitudes towards their schools than male students. And, female students are less satisfied with their school and living environment but more satisfied with their friends than male students. Students who think about studying at another school have higher levels of student cynicism but lower levels of school satisfaction and living environment satisfaction than those who do not think so. The findings reveal the negative relationships between student cynicism and students' life satisfaction. The strongest relationship has been determined to be between institutional cynicism and reduced sense of school satisfaction. Path analysis indicates that four subscales of student cynicism affect students' life satisfaction. It is possible to examine the premises that lead to the perception of student cynicism and their impacts. For future research, it is recommended to examine the ways to alleviate the negative effects of student cynicism and improve the outcomes.

Key words: Cynicism, Student cynicism, Life satisfaction, Students' Life satisfaction

Introduction

The concept of cynicism, defined in different disciplines of social sciences such as management (Andersson & Bateman, 1997; Bedian, 2007; Brandes, 1997), philosophy (Ulaş, 2002), political sciences (Schyns, Nuus & Dekker, 2004), psychology (Barefoot, Dodge, Peterson, Dahlstrom & Williams, 1989; O'Hair & Cody, 1987), religion (Hançerlioğlu, 1993), and sociology (Goldner, Ritti & Ference, 1977), became popular at the end of the 1980s with the research carried out by Kanter and Mirvis (1989) based on the attribution theory, expectancy theory, affective events theory, social exchange theory, social motivation theory and attitude theory (Brown & Cregan, 2008; Dean, Brandes & Dharwadkar, 1998; Eaton, 2000; Johnson & O'Leary Kelly, 2003; Stanley, 1998). Its reflections on educational organizations, on the other hand, developed in the early 2000s with research conducted on working groups including teachers (James, 2005; Kalağan & Güzeller, 2010; Qian & Daniels, 2008), school administrators (James, 2005), educational supervisors (Arabacı, 2010) and students (Eaton, 2000; Pitre, 2004). Frustration and negative attitudes arising from the expectations that are not (cannot be) fulfilled at the educational institutions of students are defined as student cynicism (Tinto, 1993; Brockway, Carlson, Jones & Bryant, 2002; Zuffo, Maiolo & Cortini, 2013). One of the first studies on how highly the expectations may be related to student cynicism belongs to Becker and Geer (1958). The researchers emphasized that there was a high level of cynicism among medical school students. They stated that students might have a change in their idealistic attitude (By their very nature, students who start medical school are enthusiastic about hoping to learn how to cure diseases and save lives) due to the difficulty of studying at the medical school and as a result they may experience cynicism because of the unrealistically high expectations.

Student cynicism can appear if the student experiences frustration in his own actions and in the actions of others and is deceived by others and has unrealistically high expectations of himself and others (Mirvis & Kanter, 1989). There is also the view that the gap that emerges as a result of the students' expectations of their schools and their perceptions of reality leads to student cynicism (Pitre, 2004). However, students' negative attitudes may result from the experiences they have obtained at the educational institutions they study and the student characteristics (Brockway et al., 2002; Wei, Wang & MacDonald, 2015). It can be argued that student characteristics comprise qualities such as considering others as liars, selfish and indifferent, questioning the

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motives of others, being careful and having no confidence in human relations, and feeling offended by the demands placed on them by others (Barefoot, et.al., 1989; Brandes, 1997; O'Hair & Cody, 1987).

Brockway et al. (2002) suggest that student cynicism, which Tinto based on the integration model, consists of a structure composed of academic, social, political and institutional cynicism. Social cynicism emphasizes student perceptions of the social relations between students and the amount and quality of the social activities conducted in the educational institution. Academic cynicism focuses on students' views on the courses they take in the educational process (Zuffo, et.al., 2013). Political cynicism addresses students' cynical attitudes towards the management and executives of the educational institution and the regulations, decisions, adjustments and rules related to the educational institution. Thus, the consistency and effectiveness of the policies applied in educational institutions are examined from the perspectives of students (Brockway et al., 2002; Long, 1977; Wanous, Reichers & Austin, 1994; Zuffo, et.al., 2013). According to Kanter and Mirvis (1989), institutional cynicism, which is the last sub-scale of student cynicism, is about determining the general impressions and the satisfaction level of students about the overall educational environment (Zuffo, et.al., 2013). Therefore, compared to the views in the other sub-scales, the opinions in this sub-scale are emphasized with more general expressions and effects (Brockway et al., 2002).

The relationship between student cynicism and various variables such as burnout (Pociūtė & Pečiūra, 2014; Wei, et.al., 2015), career commitment (Pociūtė & Pečiūra, 2014), professional ethics (Brands, Bronkhorst & Welie, 2011), transformative learning (Duarte, 2010), and life satisfaction (Brockway et al., 2002) is supported by relevant research results. For example, in their study on the American higher education institutions, Brockway et al. (2002) found that student cynicism had significant, negative and low-level relationships with pessimism, life dissatisfaction, and trust in interpersonal relationships. Pociūtė and Pečiūra (2014) revealed that academic cynicism was negatively associated with career commitment and positively with academic burnout. They also noted that academic cynicism was one of the important predictors of academic burnout and career commitment. Wei et.al. (2015) examined the relationship between student cynicism and student burnout in a study on Chinese graduate students. The research findings indicated that policy and social cynicism predicted emotional burnout by 17.7%, and policy, social and institutional cynicism predicted depersonalization by 15.7% and personal accomplishment by 21.5%. Based on all these studies, it can be suggested that student cynicism has negative impact on students' beliefs, feelings and behaviours. Students can mentally or physically retreat from their school and they can be dissatisfied with the decisions taken by the school administration (Brockway et. al., 2002; Zuffo, et.al., 2013). As a result, they may distance from their schools or leave their schools because of their negative attitudes towards their schools (Long, 1977). Therefore, student cynicism can be considered an important predictor of student life satisfaction.

Life satisfaction is defined as one's subjective perception of the extent of his satisfaction with his life as a result of the evaluation of his life (Meulemann, 2001), perception of his well-being and how his life is going, and his hope for the future (Bailey, Eng, Frisch, & Snyder, 2007). According to Diener (1984, p. 550), as one of the components of subjective well-being, life satisfaction is "the cognitive judgments about the individual's life". A student's life satisfaction depends on the student's evaluation of different life domains like satisfaction with his friends, family, school, self and living environment (Huebner, 1994). It is possible to come across various studies that examine the relationships between student cynicism and student life satisfaction (Brockway et al., 2002; Lai, Bond, & Hui, 2007; Neto, 2006; Xie, Chen, Zhang, & Hong, 2011). Brockway et al. (2002) found a significant negative relationship between life satisfaction and policy cynicism (-.34), academic cynicism (-.27), social cynicism (-.29) and institutional cynicism (-.42). In a study conducted with Portugese students, Neto (2006) revealed that social cynicism correlated positively with loneliness (.27) and negatively with self-esteem (-.25). In another study carried out with Chinese students, Lai, et.al. (2007) reported that there were significant negative relationships between social cynicism and life satisfaction (-.33, -.34, -.36) and that 10% of life dissatisfaction was caused by social cynicism. Xie, et.al. (2011) stated that Chinese students felt tense and stressed because they did not believe that their educational environment was supporting their personal development in an effective way, and that this caused them to display negative behaviors in their life related to their educational institutions. In addition, in relevant studies involving cynicism which is regarded as a sub-scale of the burnout concept, there is a negative meaningful relationship between students' life satisfaction scores and cynicism (Atalayin, Balkis, Tezel, Onal, & Kayrak, 2015; Cazan & Năstasă, 2015; Eken, 2018; Gündüz & Akbay, 2013; Okkassov, 2018). In a study conducted on secondary school students, there is a negative relationship between school burnout and friend satisfaction (-.13), family satisfaction (-.28), school satisfaction (-.61) and living environment (-.08) (Öztan, 2014). Thus, they found significant negative relationships between students' life satisfaction and cynical attitudes. Based on all these studies, it has been accepted that there are significant relationships between student cynicism and students' life satisfaction, and that student cynicism is an important predictor of students' life satisfaction. However, a student with a high level of cynicism is believed to

have low life satisfaction. In other words, students' negative attitudes that develop as a result of their unrealistic expectations of their schools and their actual perceptions are expected to adversely affect students' life satisfaction levels.

Although previous studies have revealed relationships between student cynicism and students' life satisfaction, the relationships between the sub-scales of student cynicism and the sub-scales of students' life satisfaction could not be identified. Although there is no research that address the relationship between student cynicism and demographic variables such as gender and age in the literature, research has been conducted on its relationship with student life satisfaction (Farwa, Hussain, Afzal, & Gilani, 2019; Hawi & Samaha, 2017; In, Kim & Carney, 2019; Santos, Sarriera & Bedin, 2019; Zappulla, Pace, Lo Cascio, et al., 2014). However, even though it is possible to find a variety of studies addressing life satisfaction of high school students (Kapıkıran & Şahin, 2012, Koçak & İçmenoğlu, 2012), no studies have been found that centers on student cynicism at high school level. It is important to identify and know the students who display high levels of cynicism and the results of student cynicism at high schools. The reason for this is that the negative opinions of the students who have a cynical attitude act as a catalyst for providing a positive change in the education system (Brockway et al., 2002). Therefore, educational administrators and policy practitioners can consider the possibilities of improving educational institutions and increase their awareness of the problems experienced in the education system. In line with all these explanations, the main purpose of this research is to determine whether student cynicism predicts students' life satisfaction by identifying the relationship between student cynicism and life satisfaction of high school students. In accordance with the main purpose of the research, the following questions were posed:

(1) Does the level of student cynicism differ in accordance with demographic variables (gender and the idea of studying at another school)?
(2) Does the level of students' life satisfaction differ in accordance with demographic variables (gender and the idea of studying at another school)?
(3) Is there a significant relationship between student cynicism and students' life satisfaction?
(4) Do the sub-scales of student cynicism predict the sub-scales of students' life satisfaction?

Method

Research model

This study, which examined the relationships between high school students' student cynicism and life satisfaction, was designed in the correlational survey model. Whether life satisfaction, the dependent variable, was predicted by student cynicism, the independent variable, was examined.

Sample

The target population of the research consists of 489.018 students studying in different high schools in the northwest of Turkey during the academic year 2017–2018. Since it would be impossible to reach all students, the research was conducted on a sample from the target population. "Simple random sampling" method was used while selecting the participants. It was believed that 384 participants, with an error rate of 5%, would be enough to represent the population which included 489.018 participants in total (Balcı, 2005, p. 95). However, it was decided that 600 students would be asked to fill in the questionnaire. A total of 600 students that represented the target population were given the questionnaire and 554 students fully completed the questionnaire. A total of 248 students (45.3%) in the sampling were female, and 299 of them (57.4%) were male. When the class levels were examined, 55 (10%) of the students were in 9th grade, 236 (43.1%) were in 10th grade, 137 (25%) were in 11th grade, and 120 (21.9%) of them were in 12th grade. While 236 students, (42.6%) were thinking about studying at another school, 286 (51.6%) were not. In addition, 76.5 % (n=407) of the students stated that they were satisfied with the schools they studied whereas 23.5 % (n=125) reported that they were not satisfied with their schools.

Measures

The data were collected through a questionnaire comprising three sections: (1) demographic questions, (2) the Cynical Attitudes toward School Scale (CATSS) and, (3) Multidimensional Students' Life Satisfaction Scale (MSLSS).

Cynical Attitudes toward School Scale (CATSS).

In this study, the scale developed by Brockway, et.al. (2002) and adapted by Kasalak and Özcan (2018) was used to determine the cynical attitudes of high school students towards the secondary education institutions they studied. The scale, whose original and adapted version is referred as "Cynical Attitudes toward College Scale (CATCS)", was called "Cynical Attitudes toward School Scale (CATSS)" because the scope of application in this study was the secondary education institutions. The scale was a five-point Likert-type scale [Strongly agree (5), Agree (4), Neither agree nor disagree (3), Disagree (2), and Strongly disagree (1)] made up of four subscales [(i) policy cynicism (sample item: Administrators ask for student input, but then do nothing with it.), (ii) academic cynicism (sample item: The number of courses that I have to take to graduate is reasonable.), (iii) social cynicism (sample item: There are plenty of fun things to do here on school.) and (iv) institutional cynicism (sample item: I would not recommend this place to anyone.)] and 18 items in total. As a result of the explanatory factor analysis performed for this study, the 4th, 8th and 9th items found in the cynical attitudes towards college scale were removed from the scale due to the fact that their factor loadings were different. Consequently, in this study, CATSS consisted of a total of 15 items, nine of which were reversed. The factor loadings of the sub-scales are as follows: (1) PC with the factor loadings in the range of 755-.810, (2) AC with the factor loadings in the range of .505-.733, (3) SC with the factor loadings in the range of .542-817 and (4) IC with the factor loadings in the range of .712-.800. The scale explained 60.40% of total variance as a result of factor analysis, and the proportion of variance explained by each sub-scale was 14.33 for PC, 14.05 for AC, 15.09 for SC and 16.91 for IC. CFA was calculated in order to verify a four-factor structure conforming to the data. Goodness of fit indexes were calculated [χ^2= 272.43, sd=84, χ^2/sd= 3.24 P<0.001], RMSEA = 0.064, GFI = 0.94, AGFI = 0.91, NFI = 0.90, NNFI= 0.91,and CFI = 0.93]. Kasalak and Özcan (2018) determined the internal consistency coefficient of the scale as α = 0.81; and in this study the Cronbach's alpha coefficients were found to be α = 0.74 for the policy cynicism; α = 0.67 for academic cynicism, α = 0.72 for social cynicism, α = 0.80 for institutional cynicism and α = 0.83 for the overall scale.

Multidimensional Students' Life Satisfaction Scale (MSLSS).

This study employed Multidimensional Students' Life Satisfaction Scale (MSLSS), which was developed by Huebner (1994) and validated and adapted to Turkish by Irmak and Karaüzüm (2008). Thus, it was aimed to determine the life satisfaction levels of secondary school students. The scale was a five-point Likert-type scale [Strongly agree (5), Agree (4), Neither agree nor disagree (3), Disagree (2) ,and Strongly disagree (1)] made up of five subscale [(i) self-satisfaction (Sample item: I like myself.), (ii) school satisfaction (Sample item I feel bad at school.), (iii) family satisfaction (Sample item: I like spending time with my parents.), (iv) living environment satisfaction (Sample item: I wish I lived somewhere else.), and (v) friendship satisfaction (Sample item: My friends are nice to me.)] and 32 items in total. The factor loadings of the sub-scales are as follows: (1) self-satisfaction with the factor loadings in the range of .582-.797, (2) school satisfaction with the factor loadings in the range of .407-.756, (3) family satisfaction with the factor loadings in the range of .734-.835, (4) living environment satisfaction with the factor loadings in the range of .455-717., and (5) friendship satisfaction with the factor loadings in the range of .614-.838. The scale explained 56.29% of total variance as a result of factor analysis, and the proportion of variance explained by each sub-scale was 10.55 , 8.20, 15.93, 8.89, and 12.70, respectively. Irmak and Karaüzüm (2008) calculated the fit index of the model obtained as a result of confirmatory factor analysis as [χ^2= 1305.70, χ^2/sd=2.8, P<0.001], RMSEA = 0.044, GFI = 0.92, AGFI = 0.91, NFI = 0.94 and CFI = 0.96. Goodness of fit indexes were calculated [χ^2= 1428.53, sd=452, χ^2/sd= 3.16, P<0.001], RMSEA = 0.063, GFI = 0.86, AGFI = 0.84, NFI = 0.85, NNFI= 0.88 and CFI = 0.89] in this study. Irmak and Karaüzüm (2008) determined Cronbach's alpha coefficients for the five sub-scales as 0.77; 0.78; 0.83; 0.76 and 0.82, respectively. In this study, the Cronbach's alpha for the scale was .89, and the Cronbach's alpha coefficients for the five sub-scales were 0.84; 0.70; 0.92; 0.76 and 0.88, respectively.

Data analysis

In order to determine the effects of gender and the idea of studying at another school on student cynicism and students' life satisfaction, t-tests were conducted. For the analysis of the data which were collected by means of the scales, Pearson r was used for the analysis of the first question and path analysis (structural equation modelling-SEM) was used to analyze the second question. The structural relationships between student cynicism and students' life satisfaction were analyzed by using LISREL 8.53. SEM can be viewed as a comparative technique which is used to assess the relationship between models and other constructed models in order to find out the best fit from the obtained data (Anderson & Gerbing, 1988).

Results and Discussion

The effects of demographic variables

The effects of gender on student cynicism and students' life satisfaction were evaluated by t-test (Table 1).

Table 1. The effects of gender on student cynicism and students' life satisfaction

	Variables	Female (n=247)	Male (n=299)	t	p
Student cynicism	Policy cynicism	3.19	2.98	2.187	.029*
	Academic cynicism	2.96	2.77	2.386	.017*
	Social cynicism	3.44	3.24	2.391	.017*
	İnstitutional cynicism	2.61	2.48	1.469	.142
Students' life satisfaction	Self-satisfaction	3.72	3.81	-1.098	.273
	School satisfaction	2.85	3.02	-2.579	.010*
	Family satisfaction	3.73	3.81	-.962	.336
	Living environment satisfaction	3.19	3.44	-3.362	.001**
	Friendship satisfaction	3.95	3.78	2.044	.041*

It was seen that there was a significant difference between male and female students in terms of their policy cynicism, academic cynicism and social cynicism and school satisfaction, living environment satisfaction and friendship satisfaction. But there was no significant difference between males and females in terms of their institutional cynicism, self satisfaction and family satisfaction. Female students had more cynical attitudes towards their schools than male students. And also, compared to male students, female students were less satisfied with their school (X $_{female}$= 2.85, X $_{male}$= 3.02) and living environment (X $_{female}$= 3.19., X $_{male}$= 3.44) but more satisfied with their friends (X $_{female}$= 3.95, X $_{male}$= 3.78).

Figure 1. Distribution of the student cynicism and students' life satisfaction scores based on gender

The effects of the idea of studying at another school on student cynicism and students' life satisfaction were analyzed by t-test (Table 2).

Table 2. The effects of the idea of studying at another school on student cynicism and students' life satisfaction

	Variables	Yes (n=236)	No (n=286)	t	p
Student cynicism	Policy cynicism	3.40	2.80	6.469	.000**
	Academic cynicism	3.09	2.66	5.337	.000**
	Social cynicism	3.53	3.16	4.300	.000**
	İnstitutional cynicism	3.07	2.09	12.152	.000**
Students' life satisfaction	Self-satisfaction	3.792	3.793	-.008	.993
	School satisfaction	2.69	3.16	-7.268	.000**
	Family satisfaction	3.73	3.86	-1.387	.166
	Living environment satisfaction	3.22	3.45	-2.840	.005**
	Friendship satisfaction	3.82	3.94	-1.501	.134

The cynical attitudes of the students with the idea of studying at another school were found to be higher in all sub-scales than those of the students who had no idea of studying at another school. In addition, the students who did not consider studying at another school had higher levels of school satisfaction and living environment satisfaction than the ones who were thinking about studying at another school.
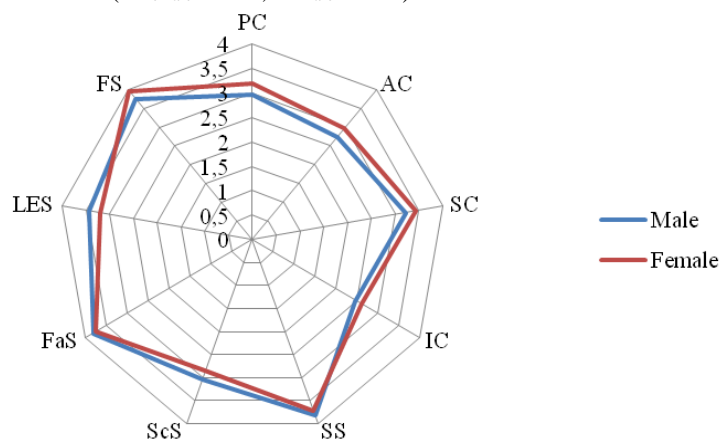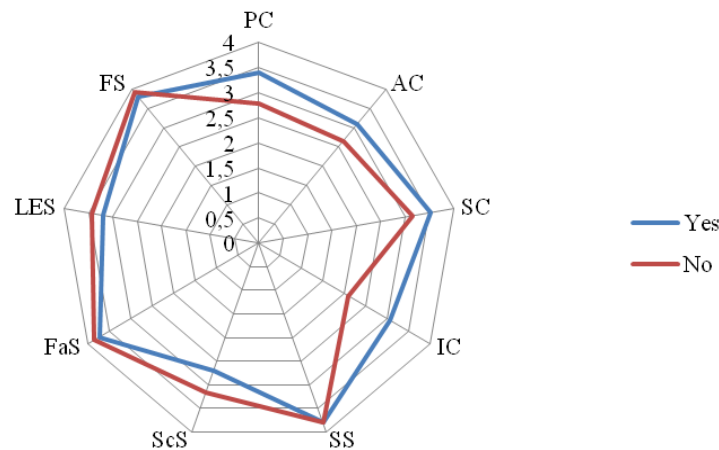

Figure 2. Distribution of the student cynicism and students' life satisfaction scores based on the idea of studying at another school

Descriptive statistics and Correlations

Descriptive statistics were given in the study. In addition, Pearson Moments Multiplication Correlation technique was employed to reveal if there was a meaningful relationship between student cynicism and students' life satisfaction, with regard to the second question in the study and the results are illustrated in Table 3.

Table 3. Descriptive statistics and intercorrelations among research variables

	1	2	3	4	5	6	7	8	9	10	11
1.PC	1										
2. AC	.18*	1									
3.SoC	.26*	.35*	1								
4.IC	.36*	.47*	.37*	1							
5.SC	.60*	.71*	.71*	.79*	1						
6.SS	-.10*	-.20*	-.01	-.15*	-.11*	1					
7.ScS	-.33*	-.34*	-.42*	-.50*	-.56*	.14*	1				
8. FaS	-.06	-.23*	-.09*	-.24*	-.22*	.46*	.18*	1			
9. LES	-.04	-.25*	-.18*	-.21*	-.25*	.31*	.20*	.43*	1		
10. FS	-.03	-.19*	-.07	-.25*	-.20*	.45*	.17*	.42*	.34*	1	
11.MSLS	-.12*	-.36*	-.23*	-.40*	-.41*	.66*	.48*	.78*	.71*	.70*	1
M	3.07	2.86	3.32	2.54	2.94	3.77	2.94	3.77	3.33	3.86	3.51
SD	1.08	.93	.99	1.03	.71	.89	.76	1.05	.89	.92	.61

*p<.01

[1. Policy cynicism (PC), 2. Academic cynicism (AC), 3. Social cynicism (SoC), 4. Institutional cynicism (IC), 5. Student cynicism (SC), 6. Self-satisfaction (SS), 7. School satisfaction (ScS), 8. Family satisfaction (FaS), 9. Living environment satisfaction (LES), 10. Friendship satisfaction (FS), 11. Multiple Students' life satisfaction (MSLS)]

When the mean scores of the students regarding their perceptions of student cynicism were examined, it was seen that the highest mean score belonged to the factor of social cynicism [X=3.32, SD=1.08] and the lowest mean score to the factor of institutional cynicism [X=2.54, SD=1.03]. When the students' perceptions of life satisfaction were taken into account, the highest mean score belonged to the factor of friendship satisfaction [X = 3.86, SS=.92] and the lowest mean score to the factor of school satisfaction [X = 2.94, SS=.76]. The overall life satisfaction levels of secondary school students [X = 3.51, SD= .61] had a higher average than their student cynicism levels [X =2.94, SD=.71].

As seen in Table 3, there is a significant and negative relation (-.18) between the dependent variable "students'

life satisfaction" with their factors and the independent variable "student cynicism". While there were significant, negative and moderate level relationships between SC and ScS (r = -.56), and between SC and SLS (r = -.41); there were significant, negative and low level relationships between SC and SS (r = -.11), between SC and FS (r = -.22,), between SC and LES (r = -.25), and between SC and FS (r = -.20). There were significant, negative and moderate level relationships between SLS and AC (r = -.36), between SLS and IC (r = -.40) and between SLS and SC (r = -.41). There were significant, negative and low level relationships between SS and PC (r = -.10), between SS and AC (r = -.20) and between SS and IC (r = -0.15). There were significant, negative and moderate level relationships between ScS and PC (r = -.33), between ScS and AC (r = -.34), between ScS and SoC (r = -.42) and between ScS and IC (r = -.50). There were significant, negative and low level relationships between FaS and AC (r = -.23), between FaS and SoC (r = -.09) and between FaS and IC (r = -.24). There were significant, negative and low level relationships between LES and AC (r = -.25), between LES and SoC (r = -.18) and between LES and IC (r = -.21).

Path analysis

Regarding the third research question, path analysis was conducted to find out the extent to which independent variable(s) that is the subscales of student cynicism predicted the dependent variables of students' life satisfaction. In the all models, all paths are significant, and the Fit indexes are acceptable (Kline, 2005) (Table 4).

Table 4. Path analysis for prediction of students' life satisfaction by student cynicism

Dependent variable	Independent variable(s)			β	t	Full model R^2	
Self-satisfaction (Model 1)	Policy cynicism*			-.23	3.64	.9±	
	Academic cynicism*			-.17	-2.18		
	Institutional cynicism*			-.18	-2.16		
	$\chi2$	*sd*	$\chi2/sd$	*RMSEA*	*GFI*	*AGFI*	*NNFI*	*CFI*
	415.27	161	2.59	.053	.93	.91	.92	.93
School satisfaction (Model 2)	Policy cynicism*			-.14	-2.37	.41±	
	Social cynicism*			-.25	-4.31		
	Institutional cynicism*			-.41	-5.99		
	$\chi2$	*sd*	$\chi2/sd$	*RMSEA*	*GFI*	*AGFI*	*NNFI*	*CFI*
	732.86	200	3.66	.069	.89	.87	.84	.86
Family satisfaction (Model 3)	Academic cynicism*			-.15	-1.98	.9±	
	Institutional cynicism*			-.19	-2.59		
	$\chi2$	*sd*	$\chi2/sd$	*RMSEA*	*GFI*	*AGFI*	*NNFI*	*CFI*
	600.32	201	2.98	.060	.91	.89	.92	.93
Living environment satisfaction (Model 4)	Academic cynicism*			-.38	-6.21	.15±	
	$\chi2$	*sd*	$\chi2/sd$	*RMSEA*	*GFI*	*AGFI*	*NNFI*	*CFI*
	647.72	202	3.20	.063	.90	.88	.83	.88
Friendship satisfaction (Model 5)	Institutional cynicism*			-.29	-5.65	.8±	
	$\chi2$	*sd*	$\chi2/sd$	*RMSEA*	*GFI*	*AGFI*	*NNFI*	*CFI*
	499.12	182	2.74	.056	.92	.90	.89	.93

Considering standard regression coefficients (path estimates) of the model, it can be argued that the effect of the sub-scales that make up student cynicism on students' self, school, family, living environment and friendship satisfaction is significant and negative. In model 1, policy cynicism (β=-.23), academic cynicism (β=-.17) and institutional cynicism (β=-.18) explained 9% of the variance in self-satisfaction. In model 2, policy cynicism (β=-.14), social cynicism (β=-.25) and institutional cynicism (β=-.41) explained 41 % of the variance in school satisfaction. In model 3, academic cynicism (β=-.15) and institutional cynicism (β=-.19) explained 9% of the variance in family satisfaction. In model 4, academic cynicism (β=-.38) explained 15% of the variance in living environment satisfaction. In model 5, institutional cynicism (β=-.29) explained 8% of the variance in friendship satisfaction.

Conclusion and Discussion

In the study, the students' social cynicism levels were determined to be higher than the other sub-scales of student cynicism. This finding corresponds to the research findings of Wei et.al. (2015). In the national literature, it is observed that students' perceptions of their schools are addressed through metaphors (Saban,

2008; Özdemir, 2012; Özdemir & Akkaya, 2013). In a study by Saban (2008), schools are described by students with the metaphors "prison", "hippodrome", "cage" and "a boring place" and with the theme "school as the center of discipline and control" because schools are the symbol of power and authority, obedience to school rules is obligatory, and it is a place that must be abandoned as soon as possible. In a study which addresses students' perceptions of school in the sub-scales of "a place of protection- development", "a place of pressure" and "home", Özdemir (2012) indicates that final year students at high school and the students that belong to high-income group perceive their school as a place of pressure more. In a study by Özdemir and Akkaya (2013), students use the metaphor of "prison" many times while defining their schools, and state that their school do not allow them freedom and they perceive it as a place to be abandoned as soon as possible. All these research findings implicitly indicate that some students have a negative attitude towards their schools and that their schools are perceived as a place of pressure. In addition, in the study female students have higher levels of policy cynicism, academic cynicism and social cynicism than male students. The reason for this can be explained by the view of Salmela-Aro, Kiuru and Nurmi (2008) who express that female students who are in the process of transition to a higher education institution might perceive the educational environment as more competitive, evaluate the educational environment more negatively and react to it.

While friendship satisfaction, which is one of the sub-scales of student satisfaction, was perceived at the highest level, school satisfaction was perceived at the lowest level. In the studies carried out by Gilman, Huebner, Tian, Park, O'Byrne, Schiff, Sverko and Langknecht (2008) on US, Ireland and S. Korean 7th-12th grade students, by Moore, Huebner and Hills (2012) on American secondary school students and by Gedutienė and Lukšaitė-Samaitienė (2018) on Lithuanian 5th-12th grade students, it is revealed that students perceive friend satisfaction at the highest level and school satisfaction at the lowest level. Therefore, the findings of these studies support the findings of this research. In addition, the findings of the present study are in line with those of Gilman, Ashby, Sverko, Florell & Varjas (2005), Karababa (2018) and Yıldırım and Önder (2018) indicating that the sub-scale of friend satisfaction is perceived at the highest level. However, it contradicts the research findings of Irmak and Karaüzüm (2008) and Seligson, Huebner, and Valois (2005). This result obtained from the research can be explained by students' attaching importance to friendship satisfaction by age. Although different results have been obtained among the sub-scales of students' life satisfaction at the highest level, it is observed that the lowest level is mostly related to school satisfaction (Gilman, et.al. 2008; Guzmán, Green, Oblath & Holt, 2019; Jovanovic & Zuljevic, 2013; Irmak & Karaüzüm, 2008; Seligson et al., 2005; State & Kern, 2017; Yıldırım & Önder, 2018). When students do not feel happy in the school, their opinions about the school are not positive, and they are not satisfied with the school activities and school life, the fact that their school satisfaction level is low can lead to such a result. In the research, it was also revealed that female students had higher friendship satisfaction levels than male students, and male students had higher satisfaction levels in school and living environment compared to female students. It can be stated that female students' friendship satisfaction levels and male students' school satisfaction levels are high due to the fact that women's perspectives on work life and work are relationship-oriented and men's perspectives are success-oriented (Lambert, 1991).

In the study, a significant negative relationship was obtained between the sub-scales of student cynicism (the independent variables) and the sub-scales of students' life satisfaction (the dependent variables). This finding is supported by the research findings of Mehdinezhad (2015), which reveal a significant negative relationship between the life satisfaction of students aged 13 and 15 and their cynicism attitudes. This result obtained from the research can be interpreted in a way that the students who perceive organizational cynicism at a higher level will have lower level of overall life satisfaction, school satisfaction, family satisfaction, living environment satisfaction and friendship satisfaction. The increase in students' negative attitudes towards their schools may adversely affect all components of student life. Therefore, students' life satisfaction may decrease. Nevertheless, a student who has turned towards his/her career goal by being entitled to receive high school education can perceive his/her school not only as an educational institution but as an institution that prepares him/her for life in many aspects such as academic, social, mental and career. The fact that the students have high expectations and the schools are not at a level to meet the expectations of the students can lead to disappointment and cynical attitudes towards schools. Therefore, deviations occur in the goals of a student with frustration and cynical attitude towards his school (Brockway et al., 2002). The student's deviations from his goals may also cause dissatisfaction with his school.

In the first model, which was developed to determine the direct effect of the sub-scales of student cynicism on self-satisfaction, it was found that the three sub-scales that make up student cynicism (policy cynicism, academic cynicism and institutional cynicism) were the negative predictors of self-satisfaction. Accordingly, the self-satisfaction level of students with a high level of policy cynicism, academic cynicism and institutional cynicism may decrease. This result indicates that self-dissatisfaction results from the frustration and negative

beliefs deriving from the expectations held for the future. This result is also consistent with the research findings of Chen, et.al. (2016) and Lai, et.al. (2007) examining the relationship between self-esteem and cynicism.

In the second model, which was established to determine the direct effect of the sub-scales of student cynicism on school satisfaction; policy cynicism, social cynicism, and institutional cynicism were found to be the negative predictors of school satisfaction. This result of the study is consistent with the opinion of Li, Zhou and Leung (2011) indicating that individuals who have high social cynicism have less satisfactory social networks due to their competitive stance. Singelis, Hubbard, Her, and An (2003) suggest that social cynicism is negatively correlated with interpersonal trust. Wei, et.al. (2015) also argue that student cynicism decreases personal success. Parker, Dipboye and Jackson (1995) maintains that cynical attitudes lead to a decrease in trust and poor intergroup collaboration. Accordingly, a student who does not recommend his school to anybody, and has a negative attitude towards the school administration and the social areas of the school may not be expected to enjoy being in his school and take pleasure in school activities. Showing no interest in the social environment of the school, losing interest in school activities, and having negative attitudes towards school life and studying may cause school dissatisfaction. For this reason, it may be useful to make attempts to prevent student cynicism in order to increase students' school satisfaction.

In the third model, which was established to determine the direct effect of the sub-scales of student cynicism on family satisfaction; academic cynicism and institutional cynicism were determined to be the negative predictors of family satisfaction. Accordingly, a student who is not happy because he has won the school where he is educated may cause dissatisfaction in the family. This can be explained by the fact that one of the important factors affecting the occupational and educational preferences of students in Turkey is families (Aşık, 2008; Aytekin, 2005; Bacanlı, 2008; Özyürek & Atıcı, 2002; Vurucu, 2010). Since one of the most important determinants of the school where the student is going to study is the family, the student can attribute the reason of the negativity related to the school to the family. Therefore, family dissatisfaction can be explained by student cynicism.

In the fourth model, academic cynicism was found to be a negative predictor of living environment satisfaction; and in the fifth model, institutional cynicism was determined to be a negative predictor of friendship satisfaction. Accordingly, life satisfaction of a student who gets the grades he deserves academically in exams in his school and thinks that these grades accurately reflect his academic qualifications may follow a positive course. The student may be expected to be satisfied with his living environment and friends by having positive attitudes as a result of being exposed to fair behaviors at the school. This finding of the study is in line with the research findings of Capri, Ozkendir, Ozkurt and Karakus (2012) and Cazan and Năstasă (2015) indicating that there is a negative relationship between self-efficacy, life satisfaction and cynicism.

In the light of all these results, this study, which examines the relationship between the variables of student cynicism and students' life satisfaction, is expected to contribute to the related literature. When the literature is examined, it is seen that research on student cynicism is discussed within the context of students of higher education institutions studying in the fields of psychology (Brockway et al., 2002), health (Brands, et.al. 2011; Kopelman, 1983; Morris & Sherlock, 1971), army (Pitre, 2004) and management (Duarte, 2010). These studies also aim to reveal how student cynicism is a common phenomenon among higher education institutions. The cynicism attitudes of students studying at educational levels other than higher education institutions were examined as a sub-scale of school burnout (Salmela-Aro & Tynkkynen, 2012; Tuominen-Soini & Salmela-Aro, 2014) and research in the context of academic, policy, social and institutional cynicism has not been found.

In the national literature, there is no research on student cynicism except the introduction of the Cynical Attitudes towards College scale developed by Brockway et.al. (2002) in order to determine the negative attitudes of students towards their university (Kasalak & Özcan, 2018). In addition, although there is research conducted on organizational cynicism and its types, the correlational studies that address student cynicism in the national and international literature are limited (Brands et.al., 2011; Duarte, 2010; Pociūtė & Pečiūra, 2014; Wei, et.al., 2015). Therefore, it is considered important for the generalizability of research findings to conduct student cynicism research in schools with different educational levels and reconduct the correlational studies. Conducting the research at a secondary education institution will make an important contribution to the literature and provide an understanding of the social dynamics in secondary education institutions. Finally, it is possible to examine the premises that lead to the perception of student cynicism and their impacts. For future research, it is recommended to examine the ways to alleviate the negative effects of student cynicism and improve the outcomes.

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The Effects of Drama on Pre-service Teachers' Affective Traits about Teaching

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Abstract

This study aims to investigate the effect of a drama program that was created to develop the affective traits of pre-service teachers; specifically, their attitudes towards teaching, teaching motivation, and self-efficacy. The study took place in the education faculty at a state university located on the west of Turkey, with 32 pre-service teachers enrolled in various departments of the faculty. Utilizing an embedded design; a type of mixed methods, the effects of the developed drama program were investigated. Quantitative data collection methods were used before and after the implementation so as to find out the effects of the program while qualitative data were collected during and after the program. Qualitative data were analysed along with the quantitative data to enhance the findings of the experiment. The quantitative data collection tools were "Teaching Motivation Scale", "Teacher Self-Efficacy Scale", and "Attitudes towards Teaching Scale". The qualitative data were collected through semi-structured interview forms. According to the findings, the developed drama program was found to be effective in improving the pre-service teachers' attitudes towards teaching, teaching motivation, and self-efficacy.

Key words: Creative drama, Teaching motivation, Teacher self-efficacy, Teacher attitudes, Affective domain

Introduction

Human development consists of three dimensions called cognitive, affective and psycho-motor dimensions. The cognitive dimension is related to remembering information, noticing, and developing the individual's mind. The psychomotor dimension consists of motor functions. The affective domain is the domain of interests, attitudes and values (Bloom, Englehart, Furst, Hill & Krathwohl, 1956). Defined as "characteristics that symbolize a person's emotions, the ways of feeling and expression" (Gable & Wolf, 1993), affective traits often shape actions by influencing visions, thoughts and perceptions (Ledoux, 2006).

In education, affective factors including attitudes, interest, self-efficacy, motivation, values, behaviors and attention have been paid great attention by researchers because of their potential effects on human cognition. Each of these affective factors has a certain effect that governs human behavior. For example, Bandura (1994) defined self-efficacy as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives". The role of self-efficacy is very important in education. The educational procedures are chosen according to not only the instructional outcomes but also their effect on the students' self-efficacy beliefs (Schunk, 2009). In the same vein, the teachers' self-efficacy plays an important role in education (Alpaslan, Ulubey & Yildirim, 2018). As defined by Akbas and Celikkaleli (2006), teachers' belief that they can teach effectively and increase the students' success is called self-efficacy for academic achievement.

Motivation, as one of the factors that influence learning, is seen as a natural force or energy that pushes individuals towards certain actions (Dornyei & Ushioda, 2011 as cited in Han & Yin, 2016). It must be remembered that motivation influence thoughts and then thoughts influence behaviors. Therefore, a teacher's beliefs regarding their ability to undertake teaching effectively will directly influence their motivation and

indirectly their behavior. The motivation of teachers to teach affects the teaching-learning process as much as the students' motivation to learn. From the teachers' point of view, motivation determines the amount of time that the teachers spend on teaching and related tasks, the quality of the resulting work, and the teachers' willingness to work (Owens, 1998 as cited in Guzel-Candan & Evin-Gencel, 2015). According to Reeve, Bolt and Cai (1999), student motivation is also dependent on teacher motivation because a quality learning environment and a positive school/classroom atmosphere are prerequisites for student success and achievement of the learning aims. The most important factor in the fulfillment of these requirements is the teacher. Such a teacher has to be highly motivated towards teaching and learning (Celik & Terzi, 2017). This is also true for the pre-service teachers who will become the teachers of the future. According to Sinclair (2008), motivation tells a lot about the pre-service teachers. The initial or entrance motivation is the first step to the profession of teaching. From the perspective of teacher education, teaching motivation can be useful in ushering individuals into specific fields, predicting the individual's commitment to the profession during and after the teacher education, and finding out their level of interest about teaching and related issues (Yildirim, Alpaslan & Ulubey, 2019).

Another affective trait of teachers along with their teaching self-efficacy and motivation is their attitudes towards the profession. Teachers' attitude towards the profession is one of the strongest determiners of their behaviors and reflects their perception of the profession. The experiences of pre-service teachers during their teacher education serve as the foundation for their future teaching practices and should be designed in a way that will create positive attitudes towards the profession (Celikoz & Cetin, 2004). The knowledge, emotions and skills that are presented to the pre-service teachers are expected to shape their future teaching. Teachers can give due to carrying out their duties if they have positive attitudes towards it (Demirtas, Comert & Ozer, 2011). It will be useful to determine the pre-service teachers' attitudes towards teaching at the beginning, even before their teacher education starts. It is important to develop positive attitudes towards teaching in pre-service teachers (Semerci & Semerci, 2004).

Development of affective traits has great importance for the education of qualified teachers (Ustundag, 2010). Affective development depends on teaching and learning procedures along with maintaining a sustainable and consistent affective environment (Ozcelik, 1989). Despite the fact that the affective domain is often an ignored and forgotten element in the education world (Garritz, 2010), there has been emphasis on the necessity of affect in learning philosophies during the last two centuries. Moreover, the importance of affect for learning is shown in many studies (Birbeck & Andre, 2009; Pierre & Oughton, 2007). It is found that students' attention and motivation will be influenced positively when the affective domain is given more importance (Kara, 2004). Especially in teacher education, the studies show that this domain cannot be denied (Garritz, 2010; Pajares, 1992; Shoffner, 2009). In addition, the importance of work on the affective domain for professional readiness level has often been underlined (Bandranaike & Wilson, 2015). Therefore, affective domain is expected to occupy an important part of teacher education. Since it involves interest and attitudes towards a field or subject, the affective domain seems directly linked to success in that field.

Since the education faculties often give more importance to cognitive development rather than affective development of pre-service teachers, one can hardly say that the teacher candidates become fully competent in terms of their affective characteristics by the time they graduate from the faculty (Aykac, Duman & Yurumezoglu, 2011). One reason for this is that the education faculties pursue a teacher-centered education policy. In the traditional teacher-centered educational practices, the most important thing is the transmission of knowledge and skills, causing the affective factors remain in the background. The role of activities that will help pre-service teachers enlarge their social network and develop a genuine enthusiasm for the profession is very important. Pre-service teachers' affective development can be ensured by participatory, learner-centered methods and techniques. At this point identifying the most effective methods and techniques to ensure affective development becomes important. For this, it is necessary to consider the advantages and disadvantages of different teaching methods and techniques.

As the teacher-centered teaching philosophy is replaced by a learner-centered one, teaching and learning procedures where the learners participate more are preferred. Examples for such procedures can be listed as station technique, brainstorming, case study, six thinking hats technique, vision improvement, conversation circles, small and large group discussion, and creative drama. Such methods and techniques enable effective participation of the student in the teaching and learning process (Ulubey, 2015; Ulubey & Gozutok, 2015). Creative drama method, which can affect the development of cognitive, affective and psycho-motor domains, is one of such methods and can be a very beneficial, inclusive and holistic method (Annarella, 1992).

O'Neill and Lambert (1991) define creative drama as a method which develops imagination and helps students to see the links between events easily. Drama expands the learning experience in the classroom without going onto the stage (Heathcote, 1991). Creative drama is a useful method that teachers and teacher candidates can use. In drama classrooms there is no risk or pressure, thoughts and values are shared freely, motivation is high, interdisciplinary links are established, and real-life issues are considered (Celik, 2016).

Creative drama is considered as a teaching method which addresses cognitive, affective and motor skills, that is used to create a holistic and aesthetic art appreciation by educating the senses, and a discipline which provides opportunities for explaining and controlling experience (Ustundag, 1996). Drama makes it possible to gain many skills such as communicating effectively in teaching context, improving creativity and imagination, critical thinking, developing democratic attitudes and behaviors, increasing sensitivity, realizing own emotions and social awareness (Akar-Vural & Somers, 2011; Freeman, Sullivan & Fulton, 2010; Kao & O'Neill, 1998; Onder, 2001; Ustundag, 2014). During the process, the students act as both performer and observer, interact with each other, and construct their actions and reactions related to their roles within the fictional situation (Andersen, 2004).

Creative drama has been used to increase the academic success and achieve the lesson goals in different school subjects (Ulubey & Toraman, 2015). There is research evidence showing that drama as a method is effective in increasing lesson success. For example, where drama was used as a method, students' academic success improved significantly in subjects such as social sciences (Aykac & Adiguzel, 2011; Ozer, 2004; Yilmaz, 2013), Mathematics (Bulut & Aktepe, 2015), Science (Arieli, 2007; Hendrix, Eick & Shannon, 2012), Citizenship and Democracy education (Ulubey, 2015), English pronunciation teaching (Korkut & Celik, 2018), German language teaching (Kirmizi, 2012), French language teaching (Aydeniz, 2012), Arts education (Atan, 2007), Music education (Yigit, 2010), and Physics (Sahin, 2012) lessons.

Creative drama was not only used for increasing academic success, but also transforming individuals' attitudes in various studies. For example, using drama caused positive attitudes towards subjects such as science (Hendrix, Eick & Shannon, 2012; Ormanci & Ozcan, 2014), mathematics (Ceylan, 2014; Debreli, 2011), and geometry (Duatepe, 2004), and foreign language (Aydeniz, 2012). In a meta-analysis study where drama was evaluated in a holistic manner based on different studies in which drama was used as a method, it was concluded that drama has a positive effect on attitudes (Toraman & Ulubey, 2016).

Considering the research evidence as summarized above, creative drama can be considered effective in developing cognitive, psychomotor and affective traits such as attitudes towards the lesson. Creative drama, as an art form, as a discipline and as a teaching method, engages all cognitive behaviors, motor movements, and at the same time affective traits (Ustundag, 2010). In this respect, drama can be used in teacher education especially to serve the purpose of improving pre-service teachers' affective traits such as teaching motivation, and developing a teacher identity. By this way, pre-service teachers can be educated as individuals who not only know the necessary knowledge their subject, but also who love their job, and who are motivated to do their job best. A teacher who has got these affective traits can create a better learning environment. With this premise in mind, this study investigates the effects of a drama program on pre-service teachers' development in terms of affective traits related to teaching. The research questions of the study were identified as the following:

1. Is there a statistically significant difference between the pre- and post-test results in terms of teaching motivation points of the pre-service teachers as a result of participating in the drama program?
2. Is there a statistically significant difference between the pre- and post-test results in terms of self-efficacy points of the pre-service teachers as a result of participating in the drama program?
3. Is there a statistically significant difference between the pre- and post-test results in terms of attitudes towards teaching points of the pre-service teachers as a result of participating in the drama program?
4. Has the program contributed to the development of affective traits of the pre-service teachers?

Method

Research Design

Embedded design, as mixed methods research, was used in this research. According to Plano-Clark (2014), the embedded design is which one data set (qualitative or quantitative) is used to support a larger qualitative or quantitative data set. The reason for choosing the second data set is that the one type of data set is not satisfactory. In this study, the focus was given on quantitative data set and quantitative data set was used to

support the quantitative data set. Quantitative data were collected via motivation scale, self-efficacy scale and attitude scale at the beginning and end of the program. Qualitative data collection tools including learner diaries, letters, and semi-structured interviews were used at during, and at the end of the program in order to determine a better understanding of the effects of the drama program on the affective traits of the pre-service teachers.

Participants

The participants of this study were pre-service teachers who were enrolled in various departments of the education faculty of a state university which is located on the Western Turkey. Five from primary education, five from pre-school education, six from English language teaching, two from German language teaching, nine from Turkish language education, and five from counseling department, a total of 27 pre-service teachers five of whom are males and 32 females participated in this study. The volunteering participants were in their senior and sophomore years, which can be considered as an advantage since they had already had an important portion of the field-specific courses and teacher training courses provided in the program.

Collection Tools Instruments

The following data collection methods and tools were used in this study.

Teaching Motivation Scale: This scale was developed by Kauffman, Yilmaz-Soylu and Duke (2011) in order to measure the intrinsic and extrinsic motivation of teacher candidates. In its original form, the scale has 12 items and two sub-dimensions. Higher points achieved from the scale indicate higher levels, and lower points indicate lower levels of motivation for teaching. According to the reliability analyses, the reliability of the intrinsic motivation sub-dimension was measured as .86; the extrinsic motivation sub-dimension as .76. In this study, the reliability of the scale was measured as .84 for the whole scale, .76 for intrinsic motivation and .70 for extrinsic motivation.

Teacher Self-efficacy Scale: This scale was developed by Tschannen-Moran and Woolfolk (2001) and adapted to Turkish by Capa, Cakiroglu and Sarikaya (2005). It is a nine-point Likert scale with 24 items and three factors labeled as "effective student participation", "effective teaching strategy", and "effective classroom management". In this study, a shortened version of the scale which has 12 items was used. The reliability analyses measured .81 for the student participation dimension, .86 for the teaching strategy dimension, and .86 for the classroom management dimension. The Cronbach Alpha coefficient for the entire scale was measured as .90.

Attitude towards Teaching Scale: This scale was developed by Ustuner (2006) to measure teacher candidates' attitudes towards teaching. The 34-item scale is comprised of three dimensions with factor loads varying between .74 and .41. The scale explains the 40 percent of the total variance. The internal consistency (Cronbach Alpha) for the scale is .93.

Semi-structured Interview Form: The researchers prepared a semi-structured interview form to provide further evidence for the effect of the program and to support the data. The form was shown to experts from educational program development, Turkish language, and creative drama fields. In line with the expert advice, the number of the questions was reduced, and the necessary language amendments were made. A pilot application with two pre-service teachers revealed ambiguity in two questions. Once these questions were fixed, the interview form was ready for use.

Learner Diaries: The pre-service teachers kept learning diaries during the drama program. These diaries served as data for the study.

Letters: The participants were asked to write letters during some of the sessions of the program. These letters were analyzed and presented in the qualitative findings part.

Data Collection and Program Implementation Procedures

The study was carried out in two phases. The first phase included the review of the literature and the development of the drama program by the researchers. All of the researchers are certified drama teachers who have completed the 320-hour creative drama leader training program. The program consisted of drama lessons planned around literary work such as successful teacher lives, biographies, films, verses, poems and stories as well as short videos, paintings and pictures. The lesson plans included activities such as writing letters, diaries,

poems, and stories; drawing pictures; preparing posters and wall displays for the participants to be able to express their feelings and thoughts. In addition, music, rhythm, and dance were used extensively especially at the beginning of the sessions. Pre-service teachers were presented with different types of teachers and situations whereby they were expected to develop their stories about how they would act in these situations, ways of coping with problems and ways of increasing their efficiency as a teacher. Therefore, the pre-text for the drama sessions were often a story, a picture, or a film. The pre-service teachers experienced true stories or possible scenarios by role-playing to form their future teacher identities. Many techniques from drama such as improvisation, role playing, still image, fragment, conscience alley, pantomime, and tableau were used as well as active teaching methods such as demonstration, discussion, case study, brainstorming, buzz 44, buzz 66, question-and answer, and station techniques.

Each session of the program was planned according to program outcomes with the duration of 3 hours. These outcomes included developing positive attitudes towards teaching, improving teaching motivation, becoming more efficacious as a teacher, becoming fond of teaching and education in general, increasing the self-efficacy of the pre-service teachers for teaching. The prepared program was reviewed by three different field experts. The necessary amendments were done in line with the experts' views.

The second phase of the study began by getting the necessary permissions from the university for the implementation of the program. Before the implementation, the quantitative data collection was carried out as pre-test. The program was implemented by the four researchers and lasted 30 hours. The four researchers participated in the first session of the program, introducing with the participants, giving information about the program and program aims, and doing ice-breaker activities. In a way that would fit the researchers' busy schedules, the first two of the researchers leaded 6 hours each and the other two leaded 9 hours of drama each. The program was implemented in the allocated drama room in the faculty. The participants kept diaries and wrote letters during the implementation process. At the end of the program, the same scales in the pre-test were applied as post- test. In addition, participants took part in semi-structured interviews. The resulting quantitative and qualitative data were analyzed and interpreted reciprocally.

Data Analysis

The quantitative data were analyzed using descriptive analyses while the qualitative data were analyzed according to inductive content analysis approaches. As for the quantitative analyses, the results of the scales were put into SPSS statistical package and analyzed using paired samples t-test and Wilcoxon signed rank test. It was assumed that the dependent variable measurements were distributed normally, and that the variance was distributed evenly. Some preliminary analyses were carried out to see if the points were distributed normally. To do this, pre-test results were checked with Kolmogorov-Smirnov and Shapiro-Wilk tests to see their normality. The results were presented in Table 1 below.

Table 1. Normality analyses for the pre-test points achieved by the participants

Test	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	p	Statistic	df	p
Teaching Motivation	.104	32	.200[*]	.958	32	.242[*]
Teaching Self-Efficacy	.091	32	.200[*]	.969	32	.472[*]
Attitudes towards teaching	.160	32	.037	.926	32	.030

*p<0,5

As seen in Table 1, the p value for the points from Teaching Motivation and Teacher Self-Efficacy scales is bigger than $\alpha=.05$. According to this finding, there is not significant deviation from the normal distribution for these two scales, $p>.05$. On the other hand, the p value for the points from the Attitudes towards Teaching scale is smaller than $\alpha=.05$. Therefore, there is significant deviation from the normal distribution for this scale. In other words, while the Teaching Motivation and Teacher Self-Efficacy scales showed normal distribution, the Attitudes towards Teaching scale did not show normal distribution. According to these findings, non-parametric tests were used for the attitude scale while parametric tests were used in the other scales.

For the content analysis, the data were first prepared by numbering and collocating after reading a few times. This first cycle coding included open-coding of the data in vivo and descriptive coding in order to put it into significant categories. The conceptual meaning in each category was identified. In the second cycle coding, the categories formed in the first cycle were put through focused and axial coding in order to identify the themes.

The validity and reliability of the qualitative part were determined by means of the transferability and expert review, and conformability strategies (Lincoln & Guba, 1985; Patton, 2014; Tedlie & Tashakkori, 2009). An expert researcher who is experienced in qualitative research methods was interviewed and given information about the design of the study. This expert was also informed about the results of the study to evaluate and validate the researchers' ways of working with the qualitative data. In order to ensure transferability in qualitative research, thick description is used often (Lincoln & Guba, 1985; Meriam, 2013; Teddlie & Tashakkori, 2009). This was ensured by giving detailed information about the participants and the procedures by which they were chosen for the study, the data collection procedures and tools, and the data collection procedures in the methods section. In addition, the findings of the study were presented objectively, with themes supported by example extracts and quotes from the data. Yildirim and Simsek (2013) advocate detailed descriptions of participant characteristics, method, data collection and analysis procedures for increasing the transferability of the research. In this respect, the methods and findings dimensions of the study were presented in detail.

Results and Discussion

In this section, the quantitative and qualitative findings are presented and discussed in terms of the aims and research questions of the study.

Findings related to the first research question

The first research question of the study is "Is there a statistically significant difference between the pre- and post-test results in terms of teaching motivation points of the pre-service teachers as a result of participating in the drama program?". In order to answer this question, the Teaching Motivation Scale was administered as pre- and post-test. The mean scores in the pre-test and post-test were compared using paired sample t-test. The results are shown in Table 2 below.

Table 2. Dependent groups t test results for teaching motivation scale points of the pre-service teachers

Measure (Teaching Motivation)			n	$\overline{X}$	s	sd	t	p
Sub dimensions	Intrinsic Motivation	Pre-test	32	4.18	.91	31	2.639	.013[*]
		Post-test	32	4.69	.93			
	Extrinsic Motivation	Pre-test	32	3.47	.93	31	2.947	.006[*]
		Post-test	32	4.02	1.07			
Total		Pre-test	32	3.89	.85	31	2.994	.005[*]
		Post-test	32	4.41	.86			

[*] p<.05

As shown in Table 2, the points before and after the implementation of the program differ significantly in both intrinsic motivation (t(31)=2.639, p<.05) and extrinsic motivation (t(31)=2.947, p<.05) sub dimensions. The mean point in the intrinsic motivation sub dimension was $\overline{X}$ =4.18 before the implementation and $\overline{X}$ =4.69 after the implementation. In the same vein, the mean point in the extrinsic sub dimension increased from $\overline{X}$ =3.47 before the implementation of the program to $\overline{X}$ =4.02 after the implementation of the program. According to analyses there was significantly difference between the pre- and post-test mean points of the pre-service teachers, t (31) =2.994, p<.05. When the general mean points are considered, the mean points rose from $\overline{X}$ =3.89 in the pre-test to $\overline{X}$ =4.41 in the post-test. So, there is an increase in the mean points in the post-test. These results show that the implementation of the program was effective in developing both intrinsic and extrinsic teaching motivation of the pre-service teachers which is considered as an important element of their affective development. Depending on the analyses it can be claimed that the implementation of creative drama in the activities resulted in positive effect on the pre-service teachers' teaching motivation which is a dimension of their affective development.

Findings related to the second research question

The second research question was "Is there a statistically significant difference between the pre- and post-test results in terms of self-efficacy points of the pre-service teachers as a result of participating in the drama program?" The results of the analyses related to this question were presented in Table 3 below.

Table 3. Dependent groups t test results for the teacher self-efficacy scale points of the pre-service teachers

Measure (Teacher Self-Efficacy)	n	$\overline{X}$	S	sd	t	p
Pre Test	32	6.34	1.13	31	5.250	.000[*]
Post Test	32	7.27	.81			

[*] p<.05

According to Table 3, there is statistically significant difference between the pre-service teachers' pre- and post-test mean points from the scale t (31) =5.250, p<.05. This difference is in favor of the post-test. The mean point was $\overline{X}$ =6.34 in the pre-test while the mean point in the post test after the implementation of the drama program rose to $\overline{X}$ =7.27. Accordingly, the drama activities during the implementation had a positive effect on the pre-service teachers' teaching self-efficacy beliefs.

Findings related to the third research question

The third research question of the study was "Is there a statistically significant difference between the pre- and post-test results in terms of attitudes towards teaching points of the pre-service teachers as a result of participating in the drama program?" The results about the attitudes of the pre-service teachers before and after the implementation of the drama program were presented in Table 4 below.

Table 4. Wilcoxon signed ranks test for the attitudes towards teaching scale points of the pre-service teachers

Post test-Pre test	n	Mean rank	Rank sum	z	p
Negative Rank	7	17.21	120.50	2.68[*]	.007[**]
Positive Rank	25	16.30	407.00		
Equal	0	-	-		

*Based on negative ranks
** p<.05

According to the results in Table 4, the mean points of the pre-service teachers from the attitude scale before and after the implementation differ significantly, z= 2.68, p<.05. Considering the difference in terms of mean rank and rank sum, this difference is in favour of the positive ranks, that is, the post-test points. Accordingly, the implemented program had a positive effect on the pre-service teachers' attitudes towards teaching.

Findings related to the fourth research question

The fourth research question was whether the drama program has contributed to the development of the pre-service teachers' affective traits. The qualitative data from the learner diaries, letters, and semi-structured interviews during and after the drama program were analysed and the findings were presented in Table 5 below.

Table 5. The contribution of drama method to the pre-service teachers' affective development

Theme/Code	f
Affective development related to the students	37
Empathize with students	14
Love the students	6
Respect the students	6
Realize how to approach to students	5
Realize the importance of motivating the students	2
Realize the importance of gaining the respect of the students	2
Realize the importance of transforming the students	1
Change the negative judgements towards students	1
Affective development related to the teaching profession	145
Increase positive attributes to the profession	17
Increase in self-efficacy about the profession	17
Motivation for coping with the difficulties of the profession	16
Enthusiasm for the profession of teaching	16
Belief that coping with the difficulties of the profession is possible	14
Belief that working in this profession is within their capabilities	10
Realize the difficulties of the profession	10
Prepare emotionally for the profession	8
Love the profession	7

Feel enthusiasm for the profession	6
Get rid of prejudices about the profession	6
Become a devoted teacher	6
Realize that the affective side of teaching is more important than its academic side	1
Gain a positive view of the profession	4
Respect the profession of teaching	3
Empathize with colleagues	1
Realize the importance of being idealistic	1
Realize the importance of not giving up hope on the profession	1
Become a determined teacher	1
Attitude Towards the Profession of Teaching	4
Gain positive attitudes towards the profession of teaching	3
Realize the importance of transforming the attitudes into behaviours	1
Reasons for their Development in the Affective Domain	48
Enactions	20
Improvisations	15
The materials that were used during the program	13
They enable experiential learning	3
They are fun	3
They enable participation	2
They are interesting	2
They are real life like	2
They enable interaction between the participants	1

As seen in Table 5, the drama program helped the affective development of the pre-service teachers in terms of their relations with the students and the profession of teaching, and positive attitudes towards the profession. They pointed out that this development is due to the implemented drama program. The pre-service teachers could empathize with the students (f=4), began loving (f=6), and respecting (f=6) them. They realized the importance of knowing how to approach the students (f=5), motivating the students (f=2), gaining their respect (f=2), and transforming them (f=1). In addition, they mentioned that their negative judgements of the students had changed thanks to the program. Some example quotes from the participants are given below.

> P3: "My emotions were reinforced further. I think I can now put myself in the students' shoes"
> P15: "We underestimate children and actually they deserve respect as much as a grownup"
> P17: "There were extreme examples in the films you showed us. There were extremely bad classes and we discussed how to approach to such situations by using drama method. In that respect, I think it contributed to me."
> P22: "I think I can maintain the motivation in my classroom. At least with the things I've learned now, I can maintain it to some extent."
> P8: I can say that it enabled me to enter the students' worlds and help them, transform them...
> I have become aware of such things.

It was found that the pre-service teachers gained a more positive view of the profession (f=17), boosted their self-efficacy beliefs (f=16), became more determined to cope with the difficulties (f=14), with increased enthusiasm (f=16), gained confidence that they will be able to cope with the difficulties (f=14), and actually be able to become a teacher (f=10). The program raised awareness about the challenges about the profession (f=10), prepared the pre-service teachers for the profession emotionally (f=8), and endeared the profession to the pre-service teachers (f=7). This created more enthusiasm in the pre-service teachers for the profession (f=6). As a result of the program, pre-service teachers realized the importance of being a devoted teacher (f=6), who has got rid of prejudices of the profession (f=6), and gained a positive view of the profession (f=4). The pre-service teachers explained that they gained more respect towards the profession after the program (f=3), that the emotional side of the profession is stronger than its academic side (f=1), and that empathizing with colleagues (f=1), being an idealistic teacher (f=1), keeping up the hope in teaching (f=1), and being determined in teaching (f=1) are important virtues of the profession. Some example quotes from pre-service teachers' accounts are presented below:

> P7: "I already had a positive view of teaching but now it has become even more positive."
> P12: "Teaching was my dream job but I didn't have the self-efficacy. I think participating in this program gave me self-confidence."
> P10: "I can say that I became more enthusiastic. Now I think I will do my job more willingly."

> P9: "Whatever happens, what problems may occur stemming from my students, their parents or my own family; I think I will be determined to cope with them."
> P10: "I believe that teaching is a unique job; affective side is important in other professions but it is the most important in teaching."
> P11: "If you are enthusiastic, emotional and in love with teaching, that is enough for the students."
> P12: "I think this caused me develop in many ways. It changed my view of teaching in a positive way."
> P13: "Indeed, being successful, taking the best grades; these are not sufficient. The affective side of teaching is more important. I noticed this and it made a really big difference for us. I wish we had seen this earlier."
> P24: "I felt ambitious. In fact this gave me the feeling that I can change everything as long as I wish so!"

Pre-service teachers remarked that they gained positive attitudes towards the profession as a result of the program (f=3), and that they realized the importance of turning these attitudes into behaviours (f=1) in their statements.

> P17: "I used to think that this dimension of teaching was being exaggerated. Also I found it difficult to tackle with students. It seemed a daunting task. But now I don't feel that way. I now think this is very important so my attitude towards teaching changed for the positive."
> P14: "If there were any friends here who experienced conflict in terms of their attitudes – and I was one of them, I think they all have overcome this problem.

Pre-service teachers attributed the stated developments in their affective domain to factors such as the enactments (f=20), the improvisations (f=15), and the materials used in the drama program (f=13). According to them, these materials were effective because they enabled experiential learning (f=3), they are fun (f=3), and therefore they provide more participation (f=2), they are interesting (f=2), they provide real life like examples (f=2), and enable interaction among the participants (f=1). Some example quotes are presented below.

> P10: "We became teachers or students during the improvisations, we saw the classroom climate.
> P19: "The stories were effective in creating the mood for experiencing the emotions of teaching. I think the right stories were chosen. As we proceeded we were excited about what would happen next."
> P6: "Actually we saw experiential learning. We stand up, we touch, we speak, we move constantly, we are exchanging opinions. If secondary school students were presented such activities, they would become more outgoing, better learners. They wouldn't be introverted, I think."
> P17: "The activities were good and could really develop affective side. I like them and found them especially interesting."
> P9: "We gave examples about our lives. I normally learn better through examples. So it was easier for me doing this way.".

Discussion and Conclusion

A significant difference was found between the pre- and post-test results of the Teaching motivation scale. At the same time, the pre-service teachers' points in terms of intrinsic and extrinsic motivation differed significantly in favour of the post-test. In the light of these results, the drama program was found to be effective in increasing the pre-service teachers' motivation both intrinsically and extrinsically. In another study which was done with primary school teachers, it was concluded that drama created intrinsic motivation in pre-service teachers and aroused curiosity (Kaf-Hasirci, Bulut & Saban-Iflazoglu, 2008). This finding is seen especially important for teacher development because an increased teaching motivation implies that the teachers will give more importance to their job, spend more effort for creating effective learning environments, become more ambitious for improving their teaching, and most importantly, become more enthusiastic for teaching.

Another impressive result of the study is that drama program was effective in increasing the pre-service teachers' self-efficacy beliefs. Self-efficacy beliefs, which include beliefs that a teacher can successfully teach their subject and increase student achievement, both influence teaching motivation and also provide teachers with the determination to create a good teaching-learning environment. It is more likely that a teacher who believes that the profession is within his capabilities will continue trying to cope with the challenges of the profession in a determined way. Studies show that self-efficacy beliefs of teachers increase significantly when drama is used in the teacher training programs (Cawthon & Dawson, 2009; Lee, Cawthon & Dawson, 2013). In

another study by Bilgin (2015) where drama techniques and scenario based teaching were used, pre-service teachers' self-efficacy beliefs increased significantly. This finding of the study can be explained by the effectiveness of drama in developing teaching skills. There are several studies which show that teachers can improve in terms of non-verbal immediacy (Ozmen, 2010), Meta-cognitive awareness (Horasan-Dogan & Ozdemir-Simsek, 2017), and several other teaching skills including body language, affective atmosphere, and spontaneous decision-making (Horasan-Dogan & Cephe, 2018). The teacher candidates in this study might have seen the progress they had made thanks to the drama implementation which might result in increased levels of teaching self-efficacy.

This study also showed that drama and drama-based activities have a significant effect on developing the pre-service teachers' attitudes towards teaching as a profession. Other studies done in this field confirm the results and conclude that creative drama plays an important role in developing positive attitudes (Ceylan, 2014; Debreli, 2011; Duatepe, 2004; Erkan & Aykac, 2014; Evin-Gencel, 2009; Gunaydin, 2008; Hendrix, Eick & Shannon, 2012; Ormanci & Ozcan, 2014). It can be concluded that creative drama can motivate the teachers for doing the profession and carrying out their responsibilities.

The data collected with the quantitative data collection tools in this study showed that pre-service teachers' affective domain was positively affected by the program which was developed based on drama. The qualitative data supports and explains the findings from the quantitative part of the study. According to the findings of the study, the program that was implemented in the pre-service teacher education caused the participants to be able to achieve better empathy with students, love and respect them more. In addition, it was observed that the pre-service teachers began to realize the importance of gaining the respect of the students and transforming them.
Having participated in the program, the pre-service teachers stated that they gained a positive view of the profession, that their self-efficacy increased, that they feel more confident that they will be able to tackle with the difficulties of the profession, that they feel more enthusiastic now, and that they believe their capability of teaching more thanks to the program. These findings from the semi-structured interview are parallel with the findings from the quantitative part that the pre-service teachers' teaching motivation, self-efficacy, and attitudes improved thanks to the program. In a parallel study, it was found that an acting-based teacher training could influence teacher candidates' identity constructions referring to personal missions, resources, and skills (Ozmen, 2011).

The other qualitative findings of the study were in the direction that the pre-service teachers gained awareness of the challenges of the profession and they transformed emotionally such that their love for the job grew and they became more enthusiastic about the job. Moreover, the program encouraged them to become more devoted teachers, without the previous negative judgements about the job, and with a more positive view of the profession. The pre-service teachers stated at the end of the program that this experience caused them gaining positive attitudes towards the program and that transforming these attitudes to actions and behaviours is important. In addition, a meta-analysis study whereby different studies are evaluated in a holistic way in terms of the effect of drama on attitudes, confirmed the positive influence of drama on students' attitudes towards the taught subject (Toraman & Ulubey, 2016). Therefore, drama plays an effective role in the development of affective traits, especially positive attitudes towards teaching when used in the training of teachers.

At the end of the study, the pre-service teachers' affective traits improved significantly. It was determined in other studies in which drama is used as a method that primary school teachers gained emotional intelligence development, affective sensitivity, and yonder of teaching (Cayir & Gokbulut, 2015; Ozdemir, 2003; Simsek, 2013). As seen in the results of this study, drama has a significant effect on developing the affective traits of especially teachers and teacher candidates. The qualitative data showed that the pre-service teachers who participated in the program began to respect their profession, noticing that the affective side of teaching is more important than the academic side, and realized the importance of empathizing with colleagues, being idealistic, not giving up hope on the profession, and being determined.

Pre-service teachers pointed out that the elements of the program such as the enactments, the improvisations, and the materials played an important role in their affective development. Specifically, they praised the materials; that the materials enabled experiential learning, they were fun, so enabled participation, they were interesting and real-life like, and that they enabled interaction among the participants. As these findings show, the importance of considering the participation opportunities in educational applications is of undeniable importance in education as well as the used methods and techniques. It seems possible to use real life like situations and blending real and fictional worlds through role plays and improvisations to serve the affective development in the education of teachers. In addition, it seems important to select literary works, films, and individual cases that are relevant as such a program is developed. In this respect, the program which included

drama and drama based instructional procedures seems to have had a significant role in developing the pre-service teachers' affective traits, increasing their self-efficacy beliefs, motivating them for teaching, and increasing their attitudes towards the profession of teaching.

In this study, the qualitative and quantitative analyses showed that, the creative drama program had a significant impact on the development of pre-service teachers' affective traits and created positive attitudes towards the profession. According to these results it can be claimed that creative drama can contribute to pre-service teachers' preparation for the profession emotionally and the development of their affective traits.

Implications

Developing the affective traits has a great importance in raising qualified teachers in teacher education (Ustundag, 2010). The studies on this issue emphasize the importance of the affective domain (Garritz, 2010; Shoffner, 2009), and underline the necessity of preparing teachers emotionally for the profession (Bandranaike & Wilson, 2015). However, many teacher education programs prioritize cognitive achievements over affective domains of the pre-service teachers. The reason for more importance given to the cognitive development of the teacher rather than their affective development is the teacher-centred education whereby the information is in the focus rather than the learners' emotions (Aykac, Duman & Yurumezoglu, 2011). Along with the pre-service teachers' cognitive readiness for the profession, their attitudes, self-efficacy and teaching motivation should also be addressed. This is because if a teacher is not ready emotionally for teaching, it may be difficult to transmit their knowledge to their students. It was seen in this study that the creative drama program had significant contribution to the pre-service teachers' affective development. By this means, it is advised that this program should be used to enable pre-service teachers to become emotionally attached to the profession of teaching and new programs based on this program can be developed using creative drama. These programs can be implemented at various points of the teacher education program and maintain the pre-service teachers' affective readiness (in terms of attitudes, motivation and self-efficacy) for the profession. In addition, other techniques such as brainstorming, station, speaking circle and six-hats thinking techniques can be added to the creative drama program to enhance the pre-service teachers' affective development.

Limitations and Future Directions

The limitation of this study is that it was carried out with only one group. The number of volunteering students for the project did not allow more groups. On the other hand, the results were supported by qualitative data. In the future, the study can be repeated where a two-group experimental design is used or supported with observational data.

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What's up with WhatsApp? A Critical Analysis of Mobile Instant Messaging Research in Language Learning

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Abstract

This paper is devoted to exploring the way how the mobile instant messaging WhatsApp is deployed to enhance the learning of a second or foreign language. Therefore, this study set out to investigate the empirical studies related to WhatsApp and language learning published in peer-reviewed journals. Thirty-seven studies were selected after a four-phase article identification procedure and a systematic review was conducted to investigate the effectiveness of WhatsApp on language learning. The analysis focused on the keywords, sample sizes, participants, data sets, duration, and language learning benefits of the studies. The results have shown that WhatsApp has been used diversely in language learning. The studies found evidence that WhatsApp can be used to improve the four language skills (i.e. reading, listening, writing, and speaking), integrated language skills, and vocabulary. Moreover, WhatsApp was found to be effective in increasing motivation and language attitudes, fostering learner autonomy, increasing interaction, and lowering language anxiety. The study also provided future research directions and recommendations for practice concerning how to appropriately employ mobile instant messaging in language learning.

Key words: WhatsApp, Mobile instant messaging, Mobile phones, Language learning, EFL

Introduction

Teaching and learning English as a foreign language (EFL) is a challenging process since learners in these environments do not have the opportunity to learn the language in natural settings. Therefore, numerous theories, approaches and methods have been proposed and implemented in EFL contexts to increase the success of the learners. One common application of the researchers, practitioners, and learners to overcome this limitation is the integration of technology that might increase exposure and motivation. Utilizing technology to increase exposure and motivation is important because the EFL learners receive far less exposure to the language and it is crucial for these learners to have adequate exposure and a motivation to learn (Lightbown & Spada, 2013). Rapid improvements in technology helped teachers and learners to implement the tenets of many theories, approaches and methods of language learning.

Technological developments provide anywhere and anytime learning opportunities. The use of computer and mobile technologies has considerably changed the way people utilize the information. Therefore, today, technology plays a significant role in educational environments in which emerging technological tools are used. It is a well-established issue in the literature that these tools can be used for language teaching and learning in several ways. Utilizing these tools in foreign language learning and teaching has caught more and more attention and thus, recently, numerous studies have explored the potential of these tools in language learning settings. One popular and simple way of integrating technology into the language learning process is to use mobile learning, which is mainly about enabling flexible learning via mobile devices (Kukulska-Hulme & Traxler, 2005). The widespread use of mobile phones by everyone indicates that they have become an important element of people's e-routines. Today, mobile smartphones are a part of modern life and learning a language by using the applications (henceforth apps) on these phones is now quite on the vogue. As smartphones become more prevalent, their potential to be used for the purposes of teaching and learning grows into more critical for mobile learning, which can be considered as a learner-centric approach that focuses on the mobility of the learner as well as the mobility of the learning.

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The mobile technology has been used by educators to comply with the demands and challenges of a globally competitive society. The apps of these devices are reckoned to liberate their users from spatial- and temporal as well as time-related constraints (Gourova, Asenova, & Dulev, 2013). In addition, these apps provide learners with opportunities for self-learning and they can be used in and outside the classroom for practising a foreign language. A growing body of research has recognized the important role of mobile technologies for efficient learning. In language learning, mobile learning took the form of mobile-assisted language learning (MALL). There is evidence in the literature that MALL has a great value for learning independently (Bull & Reid, 2004) and collaboratively (Hine, Rentoul, & Specht, 2004; Rambe & Chipunza, 2013). Mobile instant messaging (MIM) services are also commonly used by learners and teachers under MALL as they help foster individual learning experiences (Moreira, Ferreira, Pereira, & Durão, 2016).

MIMs provide "a rich context for open and transparent interaction that alerts communicants to the temporal and time-span constraints of the interaction (Rambe & Bere, 2013, p. 546). There are educational and academic advantages of MIMs (Bouhnik & Deshen, 2014) and the use of MIMs can increase motivation and participation in the educational process (Andújar, 2016). With its real-time nature, MIMs contain repair moves and negotiations for meaning that have been found to promote the development of another language (Sotillo, 2000). By using these services, students modify their discourse in order to achieve understanding; collaborating and putting into practice their target language skills. Among available MIMs (e.g. Wechat, Kakao Talk, QQ, Tango, Viber, and Telegram), the most frequently used one is WhatsApp which can be easily installed on almost all generations of smartphones.

WhatsApp is a freeware, proprietary, cross-platform and end-to-end encrypted MIM app for smartphones. It is a service that has the features of multimedia, group chat, and unlimited messaging. WhatsApp has been used in educational setting including language learning and numerous studies portrayed the positive impact of WhatsApp in language learning. According to Andujar (2016), for instance, "WhatsApp constitutes a powerful educational tool to encourage second language interaction among participants and its tremendous potential to activate students' involvement remains one of the least exploited functionalities of mobile phones" (p. 63). WhatsApp can also boost students' dynamic participation (Baffour-Awuah, 2015) and inspire learners to get involved in purposeful activities with a special emphasis on effective learning outcomes (Beetham & Sharpe, 2013).

Studies on WhatsApp regarding language learning show that it can be used to develop reading skills (Hazaea & Alzubi, 2016), listening skills (Fauzi & Angkasawati, 2019), speaking skills (Andújar-Vaca & Cruz-Martínez, 2017), writing skills (Andujar, 2016), vocabulary knowledge (Lai, 2016; Liu, 2016), enhance communicative language learning (Kheryadi, 2018), foster language learner autonomy (Alzubi & Kaur, 2018), increase motivation (Ahmed, 2019), increase classroom interaction (Mwakapina, 2016), and alleviate communication anxiety (Shamsi, Altaha, & Gilanlioglu, 2019). The majority of these studies have shown that WhatsApp helps learners motivate themselves to learn and develop positive attitudes towards using it for language learning purposes. In addition, it has been used to support a more flexible and free mode of language learning beyond the classroom. There is evidence in the literature that mobile technologies improve language teaching and learning (Liu, Lu, & Lai, 2016) and there are some review studies that have focused on mobile technology and collaborative learning (Kukulska-Hulme & Shield 2008; Kukulska-Hulme & Viberg, 2018) and quantitative meta-analysis of the effectiveness of mobile devices in language learning (Sung, Chang, & Yang, 2015). This study, different from the available review studies on mobile learning, focuses solely on WhatsApp.

Aims of the Study and Research Questions

This current study is motivated by the assumption that a critical analysis of the empirical studies that utilized WhatsApp as a MIM tool in language learning may allow researchers and practitioners to advance the current practices and seek new opportunities in language learning. This study set out to analyse only the empirical research papers that examined the role of WhatsApp in language learning. More specifically, the current study explores the opportunities and potentials provided by WhatsApp as a MIM for teaching and learning of a second or foreign language. The formulated research questions are as follows:

1. What are the characteristics of the empirical research that have been conducted on WhatsApp in language learning?
2. How was WhatsApp used for language learning?
3. What language learning benefits were found by using WhatsApp?

Method

Article Selection Criteria

Guided by the research questions, the present study applied the following article inclusion criteria:

1) The articles had to be empirical studies reporting data derived from actual observations or experimentations. Survey studies, theoretical papers and literature review studies that were solely based on opinions or perceptions of the participants were excluded.

2) The studies including the utilisation of WhatssApp were included for further analyses. Studies that deal with other MIMs, such as MMS, SMSs, Wechat, Kakao Talk, QQ, Tango, Viber, or Telegram were excluded.

3) The studies had to be conducted in second or foreign language learning settings. Articles that deal with other educational areas were excluded.

4) The studies had to be published in peer-reviewed journals, which is a useful criterion for article selection regarding the quality (Korpershoek, Harms, de Boer, van Kuijk, & Doolaard, 2016). Therefore, the analysis excluded conference proceedings and articles that are not published in peer-reviewed journals.

Identification of the Studies

The identification of the studies was conducted in four phases. A similar article selection criterion was used by some other previous critical review studies on Twitter which is a microblogging social networking site (Gao, Luo, & Zhang, 2012; Hattem & Lomicka, 2016). In phase one, Google Scholar was searched using the terms WhatsApp AND ''language learning'' and Mobile Instant Messaging AND ''language learning.'' In phase two, 12 academic databases were searched: These were: *Web of Science, Academic Search Premier, Educational Resources Information Center (ERIC), EBSCOhost Research Databases*, *Directory of Open Access Journals*, Directory of Open Access Journals (DOAJ), *JSTOR*, *Scopus*, ProQuest, Academia Social Science Index (ASOS), Turkish Education Index, and Turkish Academic Network and Information Center (ULAKBIM). The third phase employed a search in major refereed academic journals in educational technology using the keyword "Mobile Instant Messaging," "MALL," or "WhatsApp." In the last phase, the researcher checked the reference sections of the articles which are already included in the analysis. This phase helped the researcher make snowball sampling. The aim of this phase was making sure that the current study reached more empirical research conducted with WhatsApp in language learning.

This study did not apply a time limitation for the studies. After the identification process, 37 articles were found. The publication years of the studies are given in Figure 1.

Figure 1. The publication year and the number of studies

As the figure shows, the studies on WhatsApp date back to 2013, after four years of its foundation. Eleven empirical studies were published in 2016 and this was followed by eight studies in 2018 and 2019.

Analysis of the Studies

A content analysis was conducted as the majority of the studies lacked satisfactory information for a meta-analysis. The content analysis of the selected articles included the keywords, settings (i.e. university, pre-service teacher education, private language institute & college, and K12), sample size and participants (i.e., <10, 10-20, 20-50, and >50), data sets (i.e. pre-test/post-test, surveys & questionnaires, interviews, observation, post-test only, achievement test, perception logs, peer-evaluation forms, portfolios, rubric, and log files), and duration of the implementation (i.e., <4 weeks, 4–14 weeks, >15 weeks). Language learning benefits were also investigated and the identified themes were vocabulary, writing, reading, speaking, general achievement, anxiety, listening, motivation, integrated skills, language attitude, and learner autonomy.

Results and Discussion

This study investigated 37 empirical studies that explored the effects of WhatsApp in language learning. The findings were presented in six sub-headings regarding the aims of the study and the research questions. The representative sample of the analysed studies provided evidence that integrating WhatsApp into language learning yielded positive effects in developing language skills of vocabulary, reading, listening, writing, and speaking as well as other benefits such as fostering learner autonomy and decreasing anxiety. In addition to language learning benefits, the analysis of the characteristics of the studies (keywords, settings, sample sizes and participants, data sets and duration of the treatment) provided insights into the use of WhatsApp in language learning research. The analysis of the papers reveals that WhatsApp has been used to support a more flexible and free mode of learning beyond the classroom. The study found that WhatsApp has been used between teachers and students, and students and students for language learning. The findings are elaborated in line with the research questions.

Results concerning the characteristics of the empirical research that have been conducted on WhatsApp in language learning

The findings regarding the characteristics of the studies are given under *keywords*, *settings*, *sample sizes and participants*, *data sets and duration of the treatment*.

Keywords

The keywords were analysed by copying all of them from the selected articles and putting them in Vocab Profiler (http://www.lextutor.ca/vp/eng/), a website that analyses texts for types and tokens. In addition, a keyword cloud is provided (Figure 2) to illustrate the prominent keywords and thus to show the way WhatsApp is used in the empirical studies. Except for two articles, all of the articles had keywords. There were 158 keywords which had 84 types (i.e. a unique word) and 171 tokens (i.e. any occurrence of the types).

Figure 2. The keyword cloud of the keywords

The spaces between the separate words in the keywords were removed to be able to see the keywords as a single word. As figure 2 shows the most outstanding keywords are WhatsApp (N =24), EFL (N=12), Mobile Learning (N=9), Mobile Apps (N=5), and MALL (N=3). When the keywords are analysed regarding the language areas the most frequently used keywords were: writing (N=9), vocabulary (N= 6), reading (N= 5), anxiety (N= 2), speaking (N=1), listening (N= 1), and motivation (N= 1). As the analysis of language learning benefits shows, 'vocabulary' and 'writing' are the most common keywords regarding the effects of WhatsApp on a language area.

The analyses of the keywords help understand how researchers have examined WhatsApp in foreign language learning and obtain a prioritized list of keywords. Identification of the keywords showed that the keyword cloud and calculating types and tokens of the keywords represent the focus of the studies. The most outstanding keywords (i.e. writing, vocabulary, EFL, mobile, language) showed how WhatsApp research is conducted in language learning. Although it is expected to reach these findings regarding the keywords, the keyword analysis helped understand the focus of research. The deeper analysis of the keywords showed that the keywords did not follow a pattern like from general to specific or vice versa. A review study by Hattem and Lomicka (2016) also showed that the analysis of keywords in the abstracts of the studies is useful to track the tendency in a specific research area.

Settings

The settings of the studies were investigated to track the trends of using WhatsApp in educational levels. Table 1 shows the results regarding the settings of the selected articles.

Table 1. Educational settings

Setting	N	Studies
University	24	Alghamdy (2019), Allagui (2014), Ahmed (2019), Alsaleem (2013), Alzubi & Kaur (2018), Amry (2014), Andujar (2016), Andújar-Vaca & Cruz-Martínez (2017), Ashiyan & Salehi (2016), Avci & Adiguzel (2017), Awada (2016), Basal, Yilmaz & Tanriverdi (2016), Bensalem (2018), Dewi (2019), Fageeh (2013), Fauzi & Angkasawati (2019), Han & Keskin (2016), Hazaea & Alzubi (2016, 2018), Liu (2016), Minalla (2018), Shamsi et al. (2019), Şahan, Çoban, & Razı (2016), Ta'amneh (2017)
K12	6	Al-Hamad, Al-Jamal, & Bataineh, (2019), Bataineh, Al-Hamad, & Al-Jamal (2018), Bataineh, Baniabdelrahman, & Khalaf (2018), Çetinkaya & Sütçü (2018), Jafari & Chalak (2016), Lai (2016)
Private language institute&college	4	Fattah (2015), Samaie, Mansouri Nejad, & Qaracholloo (2018), Saritepeci, Duran, & Ermiş (2019), Wahyuni & Febianti (2019)
Pre-Service teacher education	3	Aburezeq & Ishtaiwa (2013), Bozoglan & Gok (2017), Yavuz (2016)

Table 1 displays that the majority of the studies examined the effects of WhatsApp in university settings. Six studies were conducted in K12 settings and three at private language institutions or colleges. Also, three of them were conducted with pre-service teachers. Except for two studies with French learners (Ashiyan & Salehi, 2016) and pre-service Arabic language teachers (Aburezeq & Ishtaiwa, 2013), all of the studies were conducted with participants who were learning English.

The analysis of the settings of the studies showed that the majority of them were conducted with university-level students. This finding is expected as WhatsApp requires having a smartphone and internet connection which cannot be available with very young learners. Moreover, as users of WhatsApp register using their mobile phone numbers, it is not surprising that the convenient samples are generally not young learners but adolescents or adult learners. When the language levels of the participants are considered, it can be said that most of the studies did not provide levels of the participants. It is reasonable to suggest using the Common European Framework of Reference (CEFR) for generalizing the levels since CEFR (Council of Europe, 2001), "opens to a complex vision of the situated and integrated nature of language learning and language use (Piccardo, North, & Goodier, 2019, p. 18). The CEFR can be used to understand what learners can do with the language.

Sample Size and the Participants

The sample sizes and the participants of the studies were analysed and the results are illustrated in Table 2.

Table 2. Number of the participants

PN	N	Studies
<10	1	Shamsi et al. (2019)
10-20	3	Aburezeq & Ishtaiwa (2013, Ahmed (2019), Dewi (2019)
20-50	19	Alghamdy (2019), Allagui (2014), Alsaleem (2013), Amry (2014), Basal et al. (2016), Bataineh, Al-Hamad, & Al-Jamal (2018), Bataineh, Baniabdelrahman, & Khalaf (2018), Bensalem (2018), Fattah (2015), Fauzi & Angkasawati (2019), Han & Keskin (2016), Hazaea & Alzubi (2016, 2018), Lai (2016), Minalla (2018), Samaie, Nejad & Qaracholloo (2018), Saritepeci et al. (2019), Şahan et al. (2016), Wahyuni & Febianti (2019), Yavuz (2016)
>50	14	Al-Hamad et al. (2019), Alzubi & Kaur (2018), Andujar (2016), Andújar-Vaca, & Cruz-Martínez (2017) Ashiyan & Salehi (2016), Avci & Adiguzel (2017), Awada (2016), Bozoglan & Gok (2017), Çetinkaya & Sütçü (2018), Dewi (2019), Fageeh (2013), Jafari & Chalak (2016), Liu (2016), Ta'amneh (2017)

The sample sizes of the articles varied greatly, ranging from 9 (Shamsi et al., 2019) to 100 (Liu, 2016). Among them, 19 studies had a sample size between 20 and 50, 14 studies were conducted with more than 50 participants, three studies were conducted with less than 20 participants and one study with less than 10 participants. In some of the studies, control and experimental groups were created and the participants were assigned to these groups (e.g., Alghamdy, 2019; Andujar, 2016; Jafari & Chalak, 2016, Ta'amneh, 2017).

Data Sets

The studies were analysed regarding the data sets including pre-test/post-test, surveys/ questionnaires, interviews, observation, and so on. The findings are given in Table 3.

Table 3. Data sets

Data	N	Studies
Pre-test/post-test	26	Ahmed (2019); Alghamdy (2019), Al-Hamad et al. (2019), Alsaleem (2013), Amry (2014), Andujar (2016), Andújar-Vaca, & Cruz-Martínez (2017) , Ashiyan & Salehi (2016), Awada (2016), Basal et al. (2016), Bataineh, Al-Hamad, & Al-Jamal (2018), Bataineh, Baniabdelrahman, & Khalaf (2018), Bensalem (2018), Bozoglan & Gok (2017), Çetinkaya & Sütçü (2018), Fageeh (2013), Fattah (2010), Han & Keskin (2016), Hazaea & Alzubi (2016), Fauzi & Angkasawati (2019); Jafari & Chalak (2016), Lai (2016), Liu (2016) Minalla (2018), Shamsi et al. (2019), Ta'amneh (2017), Wahyuni & Febianti (2019), Yavuz (2016)
Survey & Questionnaire	11	Ahmed (2019), Allagui (2014), Alzubi & Kaur (2018), Amry (2014), Awada (2016), Bensalem (2018), Dewi (2019), Fattah (2015), Han & Keskin (2016), Minalla (2018), Samaie et al.(2018)
Interviews	11	Aburezeq & Ishtaiwa (2013, Alghamdy (2019), Avci & Adiguzel (2018), Bataineh, Baniabdelrahman, & Khalaf (2018), Dewi (2019), Han and Keskin (2016), Hazaea & Alzubi (2016, 2018) Samaie et al. (2018), Saritepeci et al. (2019), Shamsi et al. (2019), Şahan et al.(2016)
Log files	3	Aburezeq & Ishtaiwa (2013, Andújar-Vaca, & Cruz-Martínez (2017) , Avci & Adiguzel (2017), Awada (2016)
Observation	2	Ahmed (2019), Dewi (2019)
Achievement test	1	Şahan et al. (2016)
Evaluation forms	1	Avci & Adiguzel (2017)
Portfolios	1	Hazaea & Alzubi (2018)
Rubric	1	Avci & Adiguzel (2017)

As Table 3 shows, 26 studies used pre and post-tests, 11 of them utilized surveys or questionnaires, 11 studies used interviews, two studies used observation techniques and log files, and there was one study that used each of the achievement test, evaluation forms, portfolios, and rubric. Some of the studies (e.g. Awada, 2016; Hazaea & Alzubi, 2018) utilized more than one data collection tool. Some studies (e.g., Ahmed, 2019; Allagui, 2014) utilized surveys and questionnaires to support the empirical data. However, the reliability and validity calculations were not involved in some of the studies which utilized pre and post-tests but did not include the findings on the validity calculation statistics. Additionally, the piloting of the instruments was conducted by only a few articles.

Duration

The analysis of the studies regarding the duration of experimental implementation is given in Table 4.

Table 4. Duration of the implementation

Duration	N	Studies
<4 weeks	4	Awada (2016), Fattah (2015), Fauzi & Angkasawati (2019), Liu (2016)
4–14 weeks	25	Ahmed (2019); Alghamdy (2019), Alsaleem (2013), Alzubi & Kaur (2018), Amry (2014), Avci & Adiguzel (2017), Bataineh, Al-Hamad, & Al-Jamal (2018), Basal et. al. (2016), Bataineh, Baniabdelrahman, & Khalaf (2018), Bensalem (2018), Bozoglan & Gok (2017), Çetinkaya & Sütçü (2018), Dewi (2019), Fageeh (2013), Han & Keskin (2016), Hazaea & Alzubi (2016, 2018), Lai (2016), Jafari & Chalak (2016), Shamsi et al (2019), Şahan et al. (2016), Ta'amneh (2017), Wahyuni & Febianti (2019), Yavuz (2016)
>15 weeks	4	Aburezeq & Ishtaiwa (2013), Andujar (2016), Andújar-Vaca, & Cruz-Martínez (2017), Saritepeci et al. (2019)
Not Available	4	Al-Hamad et al. (2019), Allagui (2014), Ashiyan & Salahi (2016), Minalla (2018)

As can be seen in Table 4, most of the studies' implementation lasted for four to 14 weeks. Four studies lasted less than four weeks and four studies' treatment lasted more than 15 weeks. Four studies did not provide information about the duration of the implementation. The duration of the studies ranged from four weeks to six months. Some of the studies were conducted in a semester of an educational year. The table shows that there are noteworthy discrepancies in duration of the intervention, which makes it difficult to reach conclusive results about the use of WhatsApp and duration of the studies.

Results concerning the utilisation of WhatsApp for language learning

The analysis of the way WhatsApp was exploited to develop language skills revealed some common practices (see Table 5). Some of the theoretical models that underlie the WhatsApp research are the zone of proximal development (Vygotsky, 1978), repair moves or negotiation for meaning (Smith, 2003), noticing hypothesis (Schmidt, 2001), and collaborative learning. The analysed studies appear to be divided between those that put WhatsApp in the centre and those that use WhatsApp to apply the tenets of a well-established theory. While some studies used WhatsApp to explore its effects on a language area (e.g. Basal et al., 2016), some others used WhatsApp for applying a theory. For instance, one study utilized the tenets of mobile-blended collaborative learning via WhatsApp (Avci & Adiguzel, 2017) and another study (Liu, 2016) used concept-mapping strategy for vocabulary learning. Sustainable success in the meaningful integration of the technology requires a well-established theoretical foundation. Although it was beyond the scope of this analysis, it was found that some of the articles lacked providing theoretical underpinnings of their studies. In other words, some of the reviewed studies did not provide a pedagogical rationale. Today, some of the theories used in technology integrated language teaching studies are social constructivism, interaction theory, activity theory, and multimodal analysis of interaction. In some of the studies, the authors have not explicitly explained the theory behind the treatment of the empirical study. Utilising the tenets of a theory is crucial because without a well-established theory, the research studies turn into a data collection that does not has any foundation (Perraton, 2000). This present review could not include a comparison of the effect sizes of the findings on different language areas because the majority of the studies did not calculate the effect size. However, such a comparison allows meta-analytic assessment of facilitates accumulation of knowledge (Sun, Pan, & Wang, 2010). This is one of the most outstanding findings of this critical review because calculating the effect size also aid to understanding the strength of the results (Maher, Markey, & Ebert-May, 2013).

Table 5. The use of WhatsApp in language learning

N	The Study	How WhatsApp is Used?
1	Aburezeq & Ishtaiwa (2013)	Traditional class activities were supported through collaborative and individual activities.
2	Ahmed (2019)	Sending several questions, debates and articles about the target topic.
3	Alghamdy (2019)	Language skills were practised
4	Al-Hamad et al. (2019)	The researchers designed a WhatsApp-based instructional program.
5	Allagui (2014)	Participants sent messages to each other and did writing assignments.
6	Alsaleem (2013)	Participants had discussions via dialogue journaling.
7	Alzubi & Kaur (2018)	Participants employed strategies of asking for clarification and correction and cooperating and empathising.
8	Amry (2014)	Studying a course (Educational Media) through the WhatsApp.
9	Andujar (2016)	Negotiation of meaning skills and cooperative learning activities.
10	Andújar-Vaca & Cruz-Martínez (2017)	Daily interactions during six months.
11	Ashiyan & Salehi (2016)	Students kept the thread of their conversation reported their progress after each session.
12	Avci & Adiguzel (2017)	Collaborative and authentic language activities using the approach of project-based learning.
13	Awada (2016)	Writing a critique essay.
14	Bataineh, Al-Hamad, & Al-Jamal (2018)	Writing texts, lesson plans and writing worksheets, a self/peer editing checklist, and a self/peer revision checklist.
15	Bataineh et al. (2018)	Eighteen paraphrasing and summarizing activities on nine reading passages.
16	Bensalem (2018)	Vocabulary assignments such as looking up the meanings of new words in a dictionary and writing example sentences.
17	Bozoglan & Gok (2017)	Dialect Awareness Training via WhatsApp
18	Çetinkaya & Sütçü (2018)	Sending information messages that include the definition of the word in English, Turkish equivalent, and a sample sentence.
19	Dewi, 2019	The teaching of integrated skills.
20	Fageeh (2013)	The researcher sent a list of words selected from the textbook. 3 times a week.
21	Fattah (2015)	Activities on re-writing, drafting, reviewing, editing, and publishing.
22	Fauzi & Angkasawati (2019)	The practice of listening through listening logs.
23	Han & Keskin (2016)	Conducting tasks in EFL speaking courses for four weeks.
24	Hazaea & Alzubi (2016)	Leaners were kept in contact with each other with regard to our reading class
25	Hazaea & Alzubi (2018)	Tasks and assignments were conducted by learners outside the classroom. The learners searched the internet about topics of their choice and share them for interaction with peers and teachers' feedback.
26	Jafari & Chalak (2016)	Studying definitions, synonyms and antonyms of the new words
27	Lai, 2016	There were reading texts, lesson plans and writing worksheets, a self/peer editing checklist, and a self/peer revision checklist. The teacher supplemented in-class writing instruction
28	Liu, 2016	Learning the 32 target vocabulary words with a concept-mapping strategy and constructing vocabulary maps.
29	Minalla (2018)	Voice messages.
30	Samaie et. al. (2018)	Students talked about a topic sent by the researchers and recorded their voices and the recordings were sent to the WhatsApp group.
31	Saritepeci et al. (2019)	Reinforcing the activities conducted in a regular classroom.
32	Sahan et al. (2016)	Messages were sent about the target idioms. The messages included the idiom, the meaning, a picture, and sample sentences.
33	Shamsi et al (2019)	The learners had three speaking tasks and recorded their voices. The learners sent and received feedback about their strengths and weaknesses.
34	Şahan et al. (2016)	15 idioms were sent via WhatsApp
35	Ta'amneh (2017)	Exchanging information and explanations.
36	Wahyuni & Febianti (2019)	WhatsApp group discussion
37	Yavuz (2016)	Used in a "Listening and Pronunciation" course

Table 5 shows the featured WhatsApp implementations for the enhancement of vocabulary were dialogue journaling (Alsaleem, 2013), vocabulary assignments (Bensalem, 2018), studying definitions, synonyms and antonyms of the new words (Jafari & Chalak, 2016), concept-mapping strategy and constructing vocabulary maps (Liu, 2016), and sending the meaning and pictures (Sahan et al., 2016). Second, some of the studies that explored the role of WhatsApp on writing skills utilized sending several questions, debates and articles about a topic (Ahmed, 2019), dialogue journaling (Alsaleem, 2013), negotiation of meaning skills and cooperative learning activities (Andujar, 2016), conducting paraphrasing and summarizing activities (Bataineh, Baniabdelrahman, & Khalaf, 2018), doing activities on re-writing, drafting, reviewing, editing, and publishing (Fattah, 2015). Third, the WhatsApp activities of developing reading skills were dealing with several questions, debates and articles about a topic (Ahmed, 2019), choosing a topic and sharing it for interaction with peers (Hazaea & Alzubi, 2016). Fourth, the speaking skills was tried to be developed through daily interactions on WhatsApp (Andújar-Vaca, & Cruz-Martínez, 2017), collaborative and authentic language activities using the approach of project-based learning (Avci & Adiguzel, 2017), and sending and receiving voice messages (Minalla, 2018). Last, the listening skill was developed via practising of listening through listening logs (Fauzi & Angkasawati, 2019). As Table 5 shows, almost half of the studies did not provide detailed information about the way they exploited WhatsApp.

Results concerning the language learning benefits of the empirical research that have been conducted on WhatsApp

The present study analysed the main language learning and teaching benefits of the articles. Table 6 shows the language areas that were positively affected by the WhatsApp.

Table 6. The language areas that were addressed by the studies

Themes	N	Studies
Vocabulary	11	Alsaleem (2013), Ashiyan & Salehi (2016), Avci & Adiguzel (2017), Bensalem (2018), Çetinkaya & Sütçü (2018), Fageeh (2013), Jafari & Chalak (2016), Lai (2016), Liu (2016), Sahan et al (2016), Şahan et al. (2016)
Writing	10	Ahmed (2019), Al-Hamad et al.(2019), Allagui (2014), Alsaleem (2013), Andujar (2016), Awada (2016), Bataineh, Al-Hamad, & Al-Jamal (2018), Bataineh, Baniabdelrahman, & Khalaf (2018), Fattah (2015), Wahyuni & Febianti (2019)
Reading	3	Ahmed (2019), Alzubi & Kaur (2018), Hazaea & Alzubi (2016)
Speaking	3	Andújar-Vaca, & Cruz-Martínez (2017) , Avci & Adiguzel (2017), Minall (2018)
General Achievement	2	Alghamdy (2019), Amry (2014)
Anxiety	2	Han & Keskin (2016), Shamsi et al. (2019)
Motivation	2	Ahmed (2019), Fageeh (2013)
Listening	1	Fauzi & Angkasawati (2019)
Integrated Skills	1	Dewi (2019)
Language Attitude	1	Gokoglan & Boz (2017)
Learner Autonomy	1	Alzubi & Kaur (2018)
Interaction	1	Aburezeq & Ishtaiwa (2013)

As the Table 6 shows, WhatsApp is used to improve main language skills and some other language areas. The analysis revealed that WhatsApp is mostly used to improve vocabulary (N=11) and writing (N=9) skills of language learners. The effects of WhatsApp on the learning of idioms (Şahan et al., 2016) and collocations (Ashiyan & Salehi, 2016) are also included in the general 'vocabulary' category. There were three studies on reading and speaking. The effects of WhatsApp on the general achievement and lowering the anxiety levels of the learners were investigated by two studies. Last, WhatsApp was used to see its impact on listening, motivation, integrated skills, language attitude, learners' autonomy, and interaction in one study each.

The analysis of the language learning benefits across the studies sheds light on the way researchers have used WhatsApp to achieve various language learning and teaching goals. This analysis revealed that using WhatsApp can be effective in developing writing, grammar, listening, general vocabulary, idiom learning, and collocation knowledge of the language learners. The studies on the effects of WhatsApp on vocabulary learning writing

skills show a similar trend, i.e. there is an interest in the incorporation of WhatsApp to allow collaborative learning and using WhatsApp as a tool to make access to the words easier. This analysis has found that almost one third of studies utilized WhatsApp to develop vocabulary in the target language (Alsaleem, 2013; Ashiyan & Salehi, 2016; Avci & Adiguzel, 2017; Bensalem, 2018; Çetinkaya & Sütçü, 2018; Jafari & Chalak, 2016; Lai, 2016; Liu, 2016; Sahan et al., 2016; Şahan et al., 2016). This finding is important because vocabulary knowledge plays a significant role in language skills (Graves, 2000; Seipel, 2011; Vermeer, 2001). More specifically, learners need mastery in vocabulary to understand what they read and listen and to speak fluently.

The effects of WhatsApp on the communication skills (i.e. listening, speaking, and writing) are important in Turkish context because a report by British Council (2013) showed that English teachers in Turkey focus on grammar-based approaches. This situation resulted in the failure of Turkish EFL learners to use English effectively for communication purposes. Moreover, the exam-centric education system in Turkey prevents even student teachers of English focusing on communication skills. As a result, beginning from the first year of the language teacher education programs, students have to put extra effort to improve speaking, writing, and pronunciation skills (Kartal & Korucu-Kis, 2019; Kartal & Özmen, 2018). WhatsApp provided promising findings on improving communication skills. The use of WhatsApp is very common among the language learners. Therefore, more research can be conducted with pre-service English language teachers to improve their communication skills by using WhatsApp.

In addition to language skills, the studies tracked the effects of WhatsApp on the anxiety, motivation, attitudes towards the language and the learner autonomy of the language learners. The positive effects of WhatsApp in these language areas can be attributed to the fact that traditional classrooms are the only settings in which learners learn and practice English. In the present study, the participants felt that WhatsApp could be an efficient MIM in which language is practised. WhatsApp can be used to encourage autonomous learning, allowing teachers to be facilitators, and to develop learning communities. The effects of WhatsApp on motivation and learner autonomy are important because post-method pedagogy requires autonomous, active and collaborative language teachers and students (Kumaravadivelu, 2006). Language learners' autonomy is crucial in countries like Turkey in which the English language is taught as a foreign language since exposure to language is very limited beyond the classroom walls. Learner autonomy is defined as taking responsibility for one's own learning (Holec, 1981). Jacobs and Farrell (2013) put it, "to have some choices as to the what and how of the curriculum and, at the same time, [learners] should feel responsible for their own learning and for the learning of those with whom they interact" (p. 7). Additionally, language teachers should help students develop autonomy (Benson, 2001). Therefore, the positive impact of WhatsApp on motivation and autonomy (Alzubi & Kaur, 2018) should be considered by language teachers.

Conclusion and Suggestions

This critical review contributed to the knowledge base of WhatsApp-assisted language learning and teaching. To exploit the positive aspects of WhatsApp for language learning, it is mandatory to motivate students to identify, comprehend, and engage in learning opportunities using WhatsApp. To the author's best knowledge, this study is the first to analyse the research papers on WhatsApp in language teaching and learning. Focusing on empirical studies is important because exploring the real use of a tool in real settings with real people is more inspiring than imagining their potential use (Selwyn & Grant, 2009). A total of 37 studies were identified, and the analysis is shown in six major categories: (a) keywords, (b) settings, (c) sample sizes and participants, (d) data sets, (e) duration of the treatment, and (f) language learning benefits. Therefore, this article addresses the topic of current concern in the sphere of language learning and technology-enhanced learning with a specific focus on the most commonly used MIM WhatsApp and provides a guideline and suggestions for further research. This study holds the idea that this review will enable language teachers and researchers to better see how WhatsApp is being used in language teaching and learning. Finally, this study provides future study directions referring to WhatsApp use in language learning.

The research findings resulted in invaluable findings regarding the usefulness of WhatsApp in language learning. This study, considering the analysed studies, provides guidelines for improving and strengthening the effects of WhatsApp in language learning. First, the studies should discuss the theoretical underpinnings clearly. An empirical study without a theoretical foundation may result in misleading conclusions. Moreover, the studies seem to collect data without any basis (Perraton, 2000) and the empirical implications without a theoretical framework cannot be reliable. The studies should clearly show how the underlying theory can be implemented in the language learning setting. Second, the levels of the participants should be given by using a standard such as CEFR for making the study applicable for generalizability. Some of the analysed articles did not provide any

information about the levels of the participants. Third, some studies did not provide information about the reliability of the pre and post-tests that were used to track the effects of WhatsApp. Fourth, the analysis of the data collection tools revealed that the studies mainly relied on quantitative data. However, supporting the statistical findings with qualitative methods is important since mixing quantitative and qualitative methods help compensate for the weaknesses of the studies (Punch, 2009). Last, the studies should provide the details of the implementation process, which is crucial for replicating the studies in different contexts. After critically analysing the 37 studies, it was found that none of them mentioned any challenges in using WhatsApp in language learning, which shows that this MIM tool is a user-friendly app that can be used in language teaching and learning.

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The Views of ELT Pre-Service Teachers on Using Drama in Teaching English and on Their Practices Involved in Drama Course

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The Views of ELT Pre-Service Teachers on Using Drama in Teaching English and on Their Practices Involved in Drama Course[*]

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Abstract

Drama provides an opportunity for students to use their imagination to express themselves verbally and with body language and is concerned with the world of 'let's pretend'. It has been widely used to foster language skills in foreign language teaching and engages both students and the teachers affectively and cognitively. Apart from its motivational aspect, drama enhances students' socio-semiotic capabilities by enabling them to engage with various modes simultaneously. Considering the wide range of contributions of drama, its integration into foreign language teaching curriculum and investigating ELT pre-service teachers' (PSTs) views on this integration seem highly valuable. Therefore, the aim of this qualitative study is to find out the perceptions of junior ELT PSTs on using drama in English Language Teaching and on their practices in a drama course. The study included twenty-eight junior ELT PSTs studying at a state school in Turkey. The participants were enrolled in *Drama in ELT* course in 2018, fall. This research adopted a Grounded Theory study design. Data were collected through an open-ended questionnaire and a semi-structured focus group interview with randomly chosen five participants in order to find out the participants' views on drama and their *Drama in ELT* course. The results revealed that ELT PSTs find Drama course useful for their professional development. Furthermore, they indicated positive feelings during the *Drama in ELT* course and the participants mostly stated that they will use drama as a part of their future English lessons. Therefore, drama courses offered by ELT curriculum has been found to contribute to ELT PSTs' academic development as well as professional development by freeing them from the conventional classroom environment and giving them opportunity to benefit from their own experiences and imagination.

Key words: Drama, English language teaching, qualitative study, pre-service teacher education

Introduction

A growing number of subject areas in teaching has started to include drama in their curriculum in the last 15 years and there has been an outstanding increase in the use of drama to teach foreign languages (Fleming, 2018). Due to its multifarious contributions such as diagnosing and understanding PSTs' language skills, supporting communicative efforts, modelling appropriate behaviors and expressions in a given context, questioning PSTs thinking and extending and challenging PSTs' responses in the language learning (Liu, 2002), it has become quite important to support foreign language learning process with drama.

Drama in education is also known as drama activities, creative drama, drama techniques, educational drama, story drama, process drama, creative dramatics, child drama and children's theatre (Iamsaard & Kerdpol, 2015; Bolton, 1986; Heathcote, 1984a; Booth, 1991; O'Neill, 1995; O'Toole, 1992; Yasar, 2006). Although there is not a consensus on the meaning of the term 'drama' (Yasar, 2006; Mages, 2008), in Turkey, Council of Higher Education (CoHE) prefers the term 'drama in education' to describe it (YÖK, 2018), and this study adopts the term drama.

There are different drama approaches in education, for instance, drama for aesthetic education, learning via drama and drama for emotional health and socialization (Landy, 1982). Likewise, there are many ways to incorporate drama into the classroom, however, there are two main drama practices; linear and process-oriented

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drama (Van de Water et al., 2015). Linear drama can be explained as having a planned sequence organized accordingly to specific goals and objectives. Facilitator rarely takes any role and interacts with participants as a character. Process-oriented drama model is participant-oriented and has educational goals about life. Unlike in the linear drama, facilitator works from the inside to shape the drama in this model. This model often processes neither product nor production. The two approaches mentioned before are often combined according to the participants and the characteristics of the leader. This combined approach is called as hybrid, transitional and mixed approach. This hybrid approach enables the leader to combine both the linear and process-oriented drama methods (Van de Water et al., 2015). In this research site, the junior ELT PSTs have been asked to practice the hybrid drama approach by combining both facilitator and leader roles as teacher candidates in their micro-teaching activities.

The significant contributions of drama to the foreign language learning process and its position in the ELT curriculum according to the latest regulations necessitate an evaluation of the current drama course offered in the department by junior ELT PSTs in order to unveil their views on using drama in teaching English. Therefore, this study aims to investigate junior ELT PSTs' views on the drama course they take and integrating drama in English language teaching. This study tries to answer the following research questions.

Research Questions:

1. What are the views of junior ELT PSTs on integrating drama in teaching English?
2. What are the views of junior ELT PSTs on their practices in the drama course they take from ELT department?

Literature Review

The explanation of the drama has been made by various researchers in the field. Bolton (1986) defines the term 'drama in education' as a difficult process and states that "drama in education is not the study of dramatic texts, although this could be part of it; it is not the presentation of school play, although this could be part of it; it is not even teaching drama or teaching about drama, although this could be large part of it" (p.18). According to Julie Thompson, "creative drama in its truest and deepest sense cannot be stereotyped. It is like a river – always on the move- making connections: connecting through improvisations, action and reaction, initiative and response, thinking and feeling; relations between people, ideas and even centuries" (as cited in McCaslin, 1999, p. 4). Additionally, drama is an authentic method for communication and interaction between PSTs using the target language by creating an imaginative world for social roles and relations (O'Neill & Kao, 1998). Liu explains the term drama in education as creating a 'dramatic world' by PSTs and teacher collaborating together (Bräuer, 2002, p. 54) and enabling 'individuality by giving opportunities to PSTs to become someone else to experience the real thing (Way, 1967; Heathcote, 1991).

Drama has become one of the alternative teaching methods being used by teachers and teacher educators (Griggs, 2001). The use of drama in education started in the early 20th century (Bolton, 1993) and since then drama has been used as a medium of teaching and learning (Wessels, 1987). Drama has been considered as a 'unique tool' (Johnson & O'Neill, 1984, p. 42) and its importance in language education has been stated widely in many research studies (Courtney, 1990; Johnson and O'Neill, 1984; Piaget, 1962; Vygotsky, 1978;).

Drama, as various studies in the field of education suggest, effects language learners in many ways. First of all, even though an abundance of studies investigates the feelings and attitudes of language learners during drama activities in the classroom, they mostly base their inferences and results on researcher observations. Some experimental studies reveal that drama decreases anxiety levels of students and makes them feel more confident and motivated (Stern, 1983; Sağlamel & Kayaoğlu, 2013; Schewe & Scott, 2003; Stern, 1983; Janudom & Wasanasomsithi, 2009). In the study conducted by Akey in 2006, it was found that when students feel confident and believe that they will succeed, and when teachers use activities based on peer-interactions in the lessons, student's successes increase. Furthermore, drama has been found to have an effect on language skills of students (Aldavero, 2008; Demircioğlu, 2010; Dönük, 2018; Gill, 2013; Heathcote, 1984b; Kılıç & Tuncel, 2009; Köylüoğlu 2010; Karamanoğlu, 1999; Miccoli, 2003; Paley, 1978, 1990; O'Gara, 2008; O'Neill & Kao, 1998; Soyer, 2016; Şimşek, 2016 Ulas, 2008; Tokmakçıoğlu, 1990). As studies suggest, drama enhances comprehension (Tajareh & Oroji, 2017), retention of knowledge (O'Gara, 2008; Şimşek, 2016) and vocabulary (Demircioğlu, 2010; Dönük, 2018; Şimşek, 2016; Tokmakçıoğlu, 1990). Extensive research has shown that drama techniques have huge impact on students' personal developments (Altıntaş, 2010; Akoğuz, 2002;

Fleming, 2000; Freeman, Sullivan, & Fulton, 2003; Kaf, 1999; Kahriman, 2014; Üstündağ, 2002; Taşkıran, 2005) and have motivational and relaxing effects on students (Fleming, 2000; Poston-Anderson, 2008; Yılmaz & Dollar, 2017), develop students' language skills better than conventional methods (Iamphitakporn, 2002) and improve the quality of the education (Önder, 2000; Royka, 2002; Zyoud, 2010). In addition to its contributions to the language learners, Drama also has positive effects on ELT PSTs.

A number of studies suggest that teaching drama techniques to ELT PSTs have great contributions to their personal and professional developments (Ananthakrishnan, 1993; Doğan & Cephe, 2018; Ekşi, 2012; Hismanoğlu, 2012; Ismail, 2011; Koc & Ilya, 2016; Oreck, 2004). Generally, pre-service teachers in ELT departments experience using drama in teaching English through micro-teaching activities. Microteaching is a technique which builds a bridge between theory and practice and also a great opportunity for pre-service teachers to practice their teaching skills (Açıkyıldız & Doğar, 2005; Gürses, Bayrak, Yalçın, Yusuf, 2006; Punia, Miglani & Singh, 2016). Micro-teaching has an important place to prepare the pre-service teachers to their profession (Ajayi-Dopemu & Talabi, 1986; Ekşi, 2012; Kpanja, 2001) as it enables them to transfer their knowledge to the real teaching situations (Çelik, 2001; Görgen, 2003). Ananthakrishnan (1993) stated that micro-teaching is an important method for pre-service teachers to develop their individual skills that contribute to teaching. Studies also show that micro-teaching enables learners to observe and evaluate different styles of teaching (Higgeins & Nicholl, 2003). Micro-teaching also creates an environment for discussion, learning and evaluation along with interaction (Celep, 2001; Cousin, Dodgson & Petrie, 1978). Similarly, Çakır and Aksan (1992) argued that micro-teaching is essential in enabling pre-service teachers to be exposed to the profession before starting their careers.

The existence of social skills of teachers is undoubtedly important in education (Elksnin & Elksnin, 1995). Teachers can transfer these skills to their studennts as role models and these skills can also help teachers communicate effectively with their students (Backlund, 1985). From this point of view, according to Gönen and Dalkılıç (1998), drama contributes to the development of social skills by enabling communication and cooperative work, since it is considered as a social process. It has been observed that the necessity of students to be active in this process increases participation (Athiemoolam, 2013). Previous studies investigating the effects of drama on pre-service teachers show that drama has positive effects on several skills of pre-service teachers including social skills (Afacan & Turan, 2012; Arslan, Erbay & Saygın, 2010; Aydın Şengül & Topçuoğlu Ünal, 2018; Kara & Çam, 2007; Kılıçaslan & Yayla, 2018; Kocayoruk, 2000). Önalan Akfırat (2006) suggested that drama is useful in teaching pre-service teachers the necessary social skills for their profession. Similarly, according to Afacan and Turan (2012), drama can be used as an effective tool to exemplify the communication problems that pre-service teachers can come across during their profession. In addition to its contribution to social skills, other studies show that pre-service teachers believe drama develop their teaching skills in an effective, fun (Güryay, 2015) and also in a creative way (Dönük, 2018).

Besides its significant contributions to the language learning process, there are few challenging issues that teachers can face while using drama in their lessons. When a number of studies, including studies from different fields, are analyzed, environment, time and material required for drama can cause teachers to face challenging situations. According to Akyol, Kahriman-Pamuk and Elmas' study (2018), pre-service teachers find drama activities useful but also indicated that they had difficulty in the preparation part. As stated in other studies, materials and learning environments are some of the factors that affect the efficiency of drama activities (Demircioğlu, 2010; Üstündağ, 1998). Similarly, Başçı and Gündoğdu's study (2011) indicates that pre-service teachers think drama activities may not achieve its goal due to time limits, not being suitable for all courses, not having sufficient knowledge about drama activities and its use. In addition, drama course can be used to implement reflective practices in ELT in Turkish context (Korucu Kis & Kartal, 2019).

Methodology

This study adopts a Qualitative research design and bases its strategies on Grounded Theory. According to Creswell et al. (2007), in grounded theory, the general and abstract theory of a process grounded in the views of the participants. The main purpose of grounded theory is to develop a theory based on data obtained from the field. It aims to provide an interpretive understating of the meaning that participants attach to the phenomenon investigated. Therefore, in this study the participants' views on Drama course in ELT department and using drama in English language teaching were investigated to understand the phenomenon.

Participants and Context

Twenty-eight junior PSTs studying in Foreign Language Teaching Department in 2018 Fall semester in a state University in Turkey participated in the study. Convenient sampling method was used in determining the participants for the study. They were taking a selective course named *Drama* whose content was determined by the instructor of the courses based on the framework and requirements given by Turkish Council of Higher Education (2007) As for the course requirements, these PSTs were expected to prepare 30-minute micro-teaching presentations individually using one of the Drama activities given in their assigned reference book *Drama Techniques in Language Learning* (Maley & Duff, 2005). Each week the PSTs and the instructor gathered for two-hour Drama lesson and two PSTs presented their micro-teaching lessons with drama. All PSTs were required to prepare lesson plans for their assigned Drama activity and these lesson plans included the following parts: level and age of the target learners, materials used during the lesson, teaching aims, learning outcomes, anticipated problems, possible solutions, warm-up activity, main activity and follow up activity. The PSTs were asked to use the assigned drama activity as the main activity and prepare related and short warm-up and follow up activities for the main activity. After each micro-teaching presentation in-class discussions were held in order to evaluate the lesson.

Drama in Education courses have been offered by Foreign Language Education Departments at various universities in Turkey for some time. While some of these departments offer drama specifically for English Language Teaching (ELT), others offer an elective drama course among other pedagogical courses. As with the latest regulations in the curriculums of teacher training programs in Turkey (YÖK, 2018), drama courses have started to be offered as both departmental and professional teaching (pedagogical) elective courses to ELT PSTs. In the current research site, junior ELT PSTs are offered to take a departmental elective drama course specifically designed to include drama use in foreign language teaching, and this is the only drama course that they can take before graduation.

Instruments

Data were gathered in two ways in order to enhance the reliability of the results. By investigating the view of the participants in using Drama activities in English language teaching by combining open-ended questions and interview results, the researcher aims to gain a clearer and deeper understanding of the phenomenon.

Open-ended questions

The aim of these questions was to reveal the PSTs' views and experiences after the Drama in ELT course with micro-teaching presentations. These questions were prepared by the researchers and checked by two experts from the field. In order to achieve this aim, five questions were directed to the participants. The questions were:

1. What words would you use to describe what you felt during the drama lessons?
2. What do you think about integrating Drama into English Language teaching in general?
3. Would you consider integrating Drama into your teaching in the future? Please explain your reasons.
4. What do you think was the purpose of micro-teaching lessons including Drama activities?
5. Considering all the Drama activities we covered though micro-teaching lessons, which one is your favorite activity? Why? Please explain.

Interview questions

The aim of these questions was also to reveal the PSTs' views and experiences on the Drama in ELT course with micro-teaching presentations and using Drama in English language teaching. These questions were checked by two experts from the field. They were directed to the randomly chosen five PSTs four weeks after the open-ended questionnaire. The interview questions were:

1. What do you think about the use of drama in teaching the English language?
2. Evaluate the course 'Drama in English Language Teaching' in terms of content and material.
3. Evaluate the drama course in terms of your professional development.

Data Collection Procedure

Data were collected in two sessions. The first session included open-ended questions and these questions were directed to all of the PSTs at the end of the semester. In the second session of the data collection process, five randomly chosen PSTs among the participants were asked to participate in the semi-structured focus-group interviews. Rather than one to one interviews, the focus-group interview process will be chosen for the study since this process was advantageous when the interaction among respondents provided best information, and when they were similar to and cooperated with each other (Creswell, 2005). Participants were allowed to interact with each other and comment on each other's responses based on their experience throughout the Drama in ELT course. The interview was conducted in participants' native language in order not to create anxiety stemming from language limitations, and to make them feel relaxed and intimate in their responses. The focused group interview was audiotaped and transcribed.

Both prior to the open-ended questions and the interview, participants' permissions were taken. All of the participants signed consent forms prior to the study. They were informed that their answers would be used only for research purposes and their names will be kept confidential. Furthermore, they were assured that their performance on these activities would not affect any of their grades for Drama in ELT course.

Data Analysis

Data gathered by both open-ended questions and interviews were analyzed by two researchers, and the categories, sub-categories and codes were checked by another expert from the field. In the analysis of the data collected from both open open-ended and interview questions for this study, the three steps were used identified in Grounded Theory research (Creswell, 2007). The researchers first started with open coding. As a result of this first segmentation 897 codes emerged from the data collected by open open-ended questions and interview. Later, the researcher proceeded to the next step, axial coding, in order to assemble the new form of data emerged at the end of open coding. As a result of axial coding, the number of codes decreased to 536. These codes were categorized and 20 sub-themes and three themes were identified. The process of data analysis continued with the last step selective coding through which these codes, sub-themes and themes were re-analyzed and the similar ones were merged and connected. At the end of this process, 536 codes were formed under six sub-categories, two further sub-categories and these sub-categories and further sub-categories were formed under two main categories best explaining the theory emerged from the research conducted. Inter-coder reliability was found to be 94% which is considered to be sufficient (Miles and Huberman, 1994).

Results and Discussion

The results will be presented under the sub-titles of main and sub-categories in this section. The general view of two main and six sub-categories are presented in Table 1.

Table 1. Main and sub-categories

Category	Name of the category	Frequency of codes in the category
Main category 1	Views on using drama in teaching English	
• Sub-category 1	• *Feelings during drama activities*	241
• Sub-category 2	• *Views on language learning*	95
• Sub-category 3	• *Classroom atmosphere*	55
• Sub-category 4	• *Shortcomings of using drama activities*	47
Main category 2	Views on ELT PSTs' practices in a drama course	
• Sub-category 1	• *Views on Micro-teaching*	72
• Sub-category 2	• *Views on using drama activities in micro-teaching*	26

As the aims of this study were to find out the views of ELT PSTs' views on both the drama course that they took in the department and integrating drama into teaching English, open-ended questions were directed to the PSTs according to these aims. As a result of ELT PSTs' views, 536 codes emerged and the related codes were grouped under sub-categories. The codes in these categories will be presented in detail and discussed under each sub-title.

Views on Using Drama in Teaching English

The ELT PSTs' views on using drama in teaching English indicated that drama has an effect on language learners' feelings, on the way of learning a foreign language, on classroom atmosphere. Moreover, ELT PSTs indicated some shortcomings that teachers can face using drama activities.

Feelings during drama activities

When the codes obtained are examined, with 241 code in total, it can be seen that the PSTs mentioned their feelings quite a lot. These 241 codes were grouped under two separate categories: 233 codes describing positive feelings and eight codes for negative feelings. The codes and their frequencies are presented in Table 2.

Table 2. The feeling codes and their frequencies

Positive Feelings	Negative Feelings
During drama activities, students feel…	*During drama activities, students feel…*
- Enjoyed (82)	- Nervous (3)
- Confident (44)	- Stressed (2)
- Motivated (25)	- Childish (2)
- Creative (25)	- Tired (1)
- Interested (19)	
- Happy (9)	
- Curious (8)	
- Excited (8)	
- Active (5)	
- Social (5)	
- Lucky (1)	
- Childish (1)	
- Valued (1)	

Among positive feelings, the most repeated codes have been found as *'enjoyed (82), confident (44), motivated (25), creative (25)* and *interested (19)'*. The PSTs indicated that they had fun during the drama activities that they participated in. They also stated that they had never got bored during these lessons. PSTs were directed a question in the open-ended questionnaire asking their favorite drama activity and their responses united in one specific drama activity: "Fashion Show". In this activity the student-teacher forms groups of 5 to 8 and asks groups to prepare a fashion show. Prior to this activity the student-teacher can show an example of a fashion show through multi-media tools. Student-teacher asks PSTs to choose 1 to 3 of their friends to be models and make several changes on their dresses to prepare them for the fashion show. At the same time the groups are expected to prepare a text explaining the fashion trends of their models' clothes. After the preparation part, the groups present their models as they are in a fashion show and the models walk as if they were walking on stage, while a spokesperson is reading the text they prepared. It is not surprising that the PSTs felt enjoyed, motivated, creative, interested and confident during this activity.

Confidence, being enjoyed and motivated were three feelings found as results of studies in the field (Janudom & Wasanasomsithi, 2009; Sağlamel & Kayaoğlu, 2013; Schewe & Scott, 2003; Stern, 1983). One of the PSTs emphasized her feelings during drama activities in the interview as:

> Student 1: *"Since speaking skill is undervalued in our country, (thanks to drama) students feel more confident while doing the tasks assigned to them during the drama activities.... (drama) lowers anxiety and motivates students."*

This study added 11 more feelings to the current list. Positive feelings such as *interested (19), happy (9), curious (8), active (5)* and *social (5)* can be related to the nature of the drama itself as it offers its users to actively participate in the process. These codes also suggest that by means of drama, teachers can achieve whole-class-learning as they will leave no students behind and all of the students will be active at the same time during the lesson. Another feeling that PSTs indicate is being *'creative'* which can be explained by one of the characteristics of drama enabling individuality by giving opportunity to become someone else to experience the reality (Way, 1967; Heathcote, 1991). One of the PSTs in the interview stated his feelings as:

> Student 2: *"(drama) enhances creative thinking because we were acting as someone else…."*

Furthermore, during drama activities, PSTs use various objects and realia such as potatoes, chairs, funnels, stones, flags and dry leaves, etc. Using these objects other than their original use may have had an effect on their creativity and imagination.

Other positive feelings have been found as *lucky (1)* and *valued (1)*. Although these codes have been indicated only one time, being valued as a speaker of a foreign language is significant in feeling confident. In the open-ended questionnaire one of the PSTs stated the following:

> Student 3: *"I feel active and comfortable in this course. It also gives me the confidence to feel that my thoughts are valuable."*

Among negative feelings, the code *nervous* (3), *stressed (2)* and *childish (2)* were found to be the most repeated codes. Childish code was used by PSTs in both positive (1) and negative (2) sense. Examples of positively and negatively used childish codes given to open-ended questions are as follow:

> Student 3: *"… (while using drama) adult learners might feel themselves as a child. This can create pride issues in class…"*

> Student 4: *"We are getting excited when we are doing childish activities… it attracts students' attention…"*

As can be seen from these extracts, PSTs may feel shy in the class (student 3) or can have fun (student 4) during the flow of drama activities in the class. Nervous and stressed feelings are found to have risen from the fear of being embarrassed in front of their peers while actively participating in drama activities (Celik, 2019).

Views on language learning

According to ELT PSTs' views using drama in teaching English has several positive effects on learning the target language. These effects and their frequencies are presented in Table 3.

Table 3. Views on language learning

Language Learning	
Drama courses enhance language learners….	*Drama courses enhance Suitability for …*
- Language skills (45)	
- Authentic language use (14)	- Different learning styles (7)
- Permanent learning (7)	- All age groups (4)
- Learner Autonomy (6)	- Available facilities (2)
- Comprehension (5)	- Various contexts (3)
- Vocabulary (2)	

The participants of this study mostly indicated that drama helps enhance *"language skills (45)"* of language learners. Given the fact that drama includes many skills in one activity, students have a chance to practice these skills in an authentic environment enabling them to be in different contexts at a time. Studies also highlight the positive relationship between drama and language skills (Aldavero, 2008; Demircioğlu, 2010; Dönük, 2018; Gill, 2013; Heathcote, 1984b; Karamanoğlu, 1999; Kılıç & Tuncel, 2009; Köylüoğlu 2010; Miccoli, 2003; O'Neill & Kao, 1998; O'Gara, 2008; Paley, 1978, 1990; Soyer, 2016; Şimşek, 2016; Tokmakçıoğlu, 1990; Ulas, 2008).

The participants of this study stated that drama enhances *authentic language use (14)*. In Tomlinson and Mashuara (2017), the authenticity of materials is related with the authentic use of these materials in an authentic context. In other words, one can have authentic materials, but the way s/he devise the activity with those materials can no longer be authentic. Furthermore, having educationally prepared materials does not designate an obligation for having a non-authentic context. Drama enables its users to have both authentic materials to be used in imaginative authentic contexts making the language learning process significantly effective for both the learner and the teacher.

Similarly, to results of the studies from the field (Demircioğlu, 2010; Dönük, 2018; O'Gara, 2008; Şimşek, 2016; Tajareh & Oroji, 2017; Tokmakçıoğlu, 1990) the participants in this study also indicated that drama affect *permanent learning (7), comprehension (5)* and *vocabulary (2)* in the target language. This can also be explained with the authenticity of language use during the activities since it allows language learners to practice the language frequently in various and meaningful ways. Vocabulary is also introduced by both the teacher and the interaction between peers. The practices of language skills through drama activities may have an effect on allowing the users to remember the language structures and vocabulary easier and for long term.

Drama is also stated to be suitable for *"different learning styles (7)", "all age groups (4)", "available facilities (2)"* and *"various contexts (3)"*. PSTs in the interview explained their views on these issues as:

> Student 3: *"Everything can be used (in drama activities) .... (it is) very rich.... crayons... for example, I brought an empty bottle.... you can even use it..."*

> Student 5: *".... Actually, we have learnt that without spending much money, with the things at hand, one can have various materials to use in drama activities."*

Drama provides multimodality in the classroom context (Ntelioglou, 2011). A person depends on several modalities for meaning making, which can include textual, oral, audial, linguistic, spatial, visual modes (Kress and Van Leeuwen, 2001). In this sense, with drama activities, students are exposed to these various modes while practicing the language skills. Therefore, students with different learning types, ages and having various facilities and context can benefit from the multimodal nature of drama.

Classroom atmosphere

After the data analysis process, 5 codes with 55 repetitions in total formed the category 'Classroom Atmosphere'. In this category, PSTs have stated that drama activities develop relationships among peers and with the teacher, as well as enabling participation and collaboration (Table 4).

Table 4. Views on classroom atmosphere

Classroom Atmosphere
Drama courses enhance language learners....
- Relationship between
o peers (12)
o students and teacher (5)
- Participation (15)
- Interaction (12)
- Collaboration (11)

The most frequent code was found to be as "*drama courses enhance language learners' relationship between peers (12) and student and teacher (5)"*. This finding coincides with the literature (Stinson & Freeboy, 2006). As Maley and Duff (1982) state drama facilitates group and peer works by helping students increase their interaction and collaboration skills, and improves the relationship among students and teacher.

Shortcomings of using drama activities

Under this category, the difficulties of the drama that the participants mentioned were gathered. Although the participants showed a positive attitude towards drama throughout the research, they also mentioned the challenging part of its implementation process. According to the obtained data, the shortcomings mentioned by the participants were, *'drama may cause classroom management problems' (16), ' drama may be inappropriate for using with all learner types'(15), 'drama may be time-consuming' (6), 'Drama may require long teacher preparation' (5)*, and *'drama may require small class size'* respectively (Table 5.)

Table 5. Shortcomings of using drama activities

Shortcomings of using Drama Activities
Drama may…
cause classroom management problems (16)
be inappropriate for using with all learner types (15)
be time-consuming (6)
require long teacher preparation (5)
require small class size (5)

Research conducted on drama in language teaching mostly focused on the advantages and positive effects of drama in language teaching. Zúñiga and Gallardo (2013) have found that language teachers lack both knowledge and experience in classroom management in using drama in teaching English. This inadequacy may be affected by general management issues which may not specifically be related with drama use. However, several PSTs in the open-ended questionnaire indicated that there may be a chaos and discipline problems in the classroom when drama is used with young learners and crowded classrooms. Here again, the problem with classroom management is associated with an outer factor i.e. language learners' age and size of the class, and may not be directly related with the drama itself.

Although drama does not require a long preparation period, some of the participants have stated that they spent much time preparing the drama activities for their micro-teaching presentations. The reason for this may be related with their own willingness to participate in drama course with a micro-teaching presentation, since most of the PSTs indicated the easiness of preparation process.

In terms of learner types, the participants expressing drama's appropriateness have been divided into two groups, one indicating that using drama with young learners is inappropriate while the second vice versa. There is not a consensus among participants in this issue and this may be related with their perspectives for and expectations from teaching a foreign language.

Views on ELT PSTs' practices in drama course

Views on micro-teaching

Eight codes have emerged that enlighten the perspectives of PSTs on micro-teaching. The codes and their frequencies are given in Table 6.

Table 6. Views on micro-teaching

Views on micro-teaching
Micro-teaching sessions were helpful for….
- Getting prepared for the profession (37)
- Developing positive feelings among pre-service teachers as
o   motivation (3)
o   self-confidence (6)
o   relaxation (3)
o   enthusiasm (1)
o   experienced (3)
o   satisfied (1)
- Seeing other teaching styles (5)
- Fixing mistakes in teaching (4)
- Seeing self-deficiencies in teaching (4)
- Understanding the teaching profession (3)
- Developing classroom management skills (2)

According to the codes, PSTs mostly find micro-teachings as a beneficial way to prepare themselves for the profession. This finding is also consistent with previous studies (Britton & Anderson, 2010; Ceyhun & Karagölge, 2002; Ekşi, 2012; He & Yan, 2011; Kılıç, 2010; Küçükoğlu, Köse, Taşgın, Yılmaz, & Karademir, 2012; Ögeyik, 2009; Simbo, 1989). Thanks to micro-teaching ELT PSTs can practice their teaching skills and get feedback both from their peers and lecturers. The opportunities that the participants indicated like *seeing other teaching styles (5), fixing mistakes in teaching (4), seeing self-deficiencies in teaching (4), understanding the teaching profession (3),* and *developing classroom management skills (2)* are all related with getting

prepared for the profession. Having been completed these stages, teacher candidates feel more experienced over the period with micro-teaching activities. Korucu Kıs & Kartal's (2019) study reveal similar findings, as their results suggest that ELT PSTs see these micro experiences in teaching as helpful for noticing their strengths and weakness.

As for the positive feelings, findings support several studies in the field (Ananthakrishnan, 1993; Cebeci, 2016; Ögeyik, 2009; Özdemir & Üstündağ, 2007; Şen, 2009; Şen, 2010). Consistent with the literature, this research found that pre-service teachers develop positive feelings for teaching a foreign language with increased self-confidence, motivation and enthusiasm. These positive feelings towards teaching can be also related with the positive feelings that students develop during a drama activity, since when students show eagerness, happiness and attentiveness towards the lesson, it is not surprising that the teacher can have similar feelings.

Views on using drama activities

The results revealed that ELT PSTs find using drama activities in their micro-teaching sessions helpful for their teaching skills. They also indicated that drama is beneficial for forming positive relationships between teachers and students as well as among students themselves. Furthermore, the findings show that ELT PSTs think drama activities increase participation to the lesson (Table 7).

Table 7. Views on using drama activities

Views on using drama activities
Micro-teaching sessions with drama were helpful in….
- Improving teaching skills in a/an
o   interesting way (1)
o   fun way (7)
o   effective way (5)
o   meaningful way (1)
o   creative way (2)
- Developing positive social interactions among
o   pre-service teachers as peers (3)
o   pre-service teachers and the lecturer (3)
- Increasing student participation (4)

In line with the findings in the literature (Güryay, 2015; Dönük, 2018), drama diversifies the way language teachers teach a foreign language by making their lessons more interesting, fun, effective, meaningful and creative.

Therefore, drama paves the way for preparing lessons far from conventional methods (Iamphitakporn, 2002). Some of the PSTs in the interview have indicated that in their other courses the PSTs who took the drama course performed better teaching skills when compared to the ones who did not take the course.

> Student 1: *"Some of our friends took this (drama) course, while the others did not. The difference between the friends who took and who did not take the course (drama) was evident in terms of lesson plans and materials used in presentations. The ones who took drama course were more creative and willing to do more things during the presentations than others. They were not using classical things in those lessons."*

Conclusion

This study aimed to find out the thoughts of junior ELT PSTs on using drama activities to teach English and on their practices in the drama course they took offered by the department. The results generally showed that ELT PSTs mostly have positive views towards integrating drama into foreign language teaching. The codes and categories emerged from their thoughts indicated mainly the contributions of drama on teaching, although very few stating some shortcomings with the drama itself. The participants also expressed having positive feelings towards drama use and the most outstanding feeling has been found to be being enjoyed during drama activities. Surprisingly, the participants pointed out drama as a childish activity both positively and negatively, which can be related with the characteristics and learning styles of those participants.

Additionally, the results revealed that the participants found the practices, namely micro-teaching and in-class discussions on micro-teaching presentations, beneficial for their professional development. They also indicated that these micro-teaching assignments with drama activities have improved their teaching in various ways. In other words, it was not just the micro-teaching itself, but also using drama helped them diversify the way they teach English as well as develop their own way of teaching. Moreover, the ELT PSTs stated that they developed positive feelings towards the profession thanks to micro-teaching with drama.

The results of this study revealed that drama courses should be offered to PSTs in ELT departments, which is in line with the latest regulations done by Council of Higher Education (YÖK, 2018). However, instead of being a selective course, drama can be a required course in Faculties of Education. Drama course offered to ELT PSTs can include teaching classroom management techniques specifically for integrating drama in teaching English. Also, since the participants indicated that drama may not be suitable for all learner types, this course can be divided into sections such as Drama for Young Learners and Drama for Adolescence. Considering the class size in Turkish state schools, PSTs can be facilitated to prepare activities for crowded classroom, as they indicated that smaller classroom size is better in integrating drama in English language teaching. This study is limited to the views of pre-service teachers. Further studies can investigate the views of in-service English teachers by having training sessions with drama. Moreover, data were collected through an open-ended questionnaire and a focus-group interview; therefore, data collection processes can be extended to the whole term including reflective diaries from the students. In this way, students can reflect on their micro-teaching experiences with Drama integration in a comprehensive way.

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The Relationship between Teacher Perceptions of Distributed Leadership and Schools as Learning Organizations

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Abstract

This study aimed to identify the relationship between teachers' distributed leadership and perceptions of schools as learning organizations. This study used correlational survey model and made use of correlations to determine the relationship between the two variables. Study population consisted of 600 teachers employed at secondary schools in the central district of Bolu in 2018-2019 academic year. The study was carried out on the population and therefore no sampling was required. Of the 600 scales distributed, 268 were returned and evaluated. The measurement tool used in the research consists of three parts. First part of the scale included demographic characteristics of teachers. The second part included the Distributed Leadership Scale and the third part consisted of the Learning School Scale. Some of the results of the research are as follows: Teachers have high perceptions of learning school and sub-dimensions such as team learning, mental models, shared vision, personal domination and shared leadership. Male and female teachers are similar in learning schools and sub-dimensions of learning in teams, mental models, shared vision and shared leadership perceptions. According to the results of the research, female teachers 'perceptions of personal dominance dimension are higher than male teachers' perceptions. Teachers with different types of in-service participation and project numbers have similar characteristics to the learning school, learning as a team, mental models, shared vision and personal dominance sub-dimensions and shared leadership perceptions. The teachers' perceptions of teachers in schools whose schools have different number of teachers show different characteristics in other dimensions and shared leadership perceptions except for personal dominance dimension.

Key words: Teacher, Leader, Shared leadership, Learning school

Introduction

Education has an important role in the progress and development of countries and in shaping their future. Countries need to improve their education systems and schools, one of the most significant elements of the system of education continually in order to keep up with the changes of the 21st century where constant transformations take place. Development of schools depends on state policies as well as schools' self-improvement and effectiveness. Learning organizations are the organizations that create new knowledge, share this knowledge within the organization and benefit from this knowledge in the solution of problems by ensuring that the whole organization learns new information and that this information becomes organizational information (Senge, 1990). Schools need to be learning organizations in order to be effective. In addition, schools as learning organizations are needed since each student has different learning styles (Middlewood, Parker & Beere, 2005).

Organizations based on problem-solving in essence differ from traditional organizations (Akhtar & Khan, 2011). Learning organizations approach learning primarily as a process and ensure that learning takes place due to individuals' interaction without relying on a certain period for learning to occur (Braham, 1998). In learning organizations, the leader empowers the staff and ensures active participation by creating a shared vision (Efil, 1999). Learning organizations are structures with high expectations, they are forward-thinking, proactive, strategic in decision-making and flexible in adapting to changes and they encourage experiences and support learning and development (Akhtar & Khan, 2011). Only through healthy structuring efforts that leaders of organizations can ensure that their organizations are learning organizations (Şimşek & Kıngır, 2006). The

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fundamental element in this structuring is the workforce, i.e., human resources, in the organization. Organizations' human resources are usually drawn to administrators and leaders in the organization and influenced largely by them. The communication and interaction of leaders with their staff differ based on their personal characteristics and the common goals that bring them together. In organizations where staff comes together around common goals, distributed leadership practices may ensure that the members of the organization are empowered and there is synergy in addition to revealing the learning abilities of the staff via some behavioral models. The model behaviors that the leaders display help create an organizational climate pertinent to lifelong learning and contribute to the creation, dissemination, and development of effective ideas. Yazıcı (2001) reports that leaders in learning organization should have the following roles:

- Leaders should demonstrate that they are open to learning and development and make efforts in this direction. As a natural outcome of this, they can have successful interactions with staff and guide their attitudes and behaviors.
- Providing opportunities for learning and development by supporting the staff.
- Establishing systems that enable staff to continue learning in their daily work and disseminating the importance of learning to the whole organization.

School administrators who are the dynamic pillars of the schools as learning organizations have important roles and responsibilities. However, in order to fulfill these duties, school administrators should be able to move away from their traditional administration roles, have modern leadership skills and transform their schools into organizations that generate, transfer and utilize knowledge. Only in this way, schools will be transformed into learning organizations and effective schools. It is very difficult for school administrators to achieve all these by themselves. Senge (2002) states that success in this regard cannot be ensured with the traditional administration approach, that the learning organizations can only be guided with a new leadership approach instead and that a leader in learning organizations is a teacher, designer and administrator rolled into one. In this context, it is very important for school administrators to have distributed leadership skills via transferring or sharing authority and duties. Gronn (2000) explained that the concept of distributed leadership is the outcome of interactions among members of the organization rather than the influence of a sole person in the organization. The leader encourages employees in the whole organization to participate effectively in the decision-making process through sharing and empowerment (Efil, 1999). Transfer of authority is an important way to increase the efficiency of organizations. As a result of the transfer of authority, the organization breaks away from the centralist structure, rapid decision-making mechanisms develop and the dynamism of the organization increases. With the transfer of authority, interest in new concepts and techniques grows (Bursalıoğlu, 2002). Hence, cooperation increases in organizations. Teachers who are given authority and responsibility may be more willing to learn. In this sense, the fact that the school administrators engage in distributed leadership practices is deemed significant because school staff feels they are important and their motivation increases. On the other hand, Ağıroğlu-Bakır (2013) defined distributed leadership as a type of leadership based on utilizing shared competences to achieve the goals of the school as a result of cooperation and interaction of all school stakeholders.

In the 21st century, school administrators are expected to develop and transform their schools with collaborative and shared behaviors (Özer & Beycioğlu, 2010). Distributed leadership arises from the interaction between the leader and members. Distributed leadership, which creates solidarity in staff actions, determines the direction of leadership practices by attaching importance to relationships with their staff (Spillane, 2005). Through effectively distributed leadership behaviors of school administrators and by adapting to changes in educational organizations where change is compulsory, it is possible to create innovative and effective learning schools (Elmore, 2000). Following distributed leadership practices is rather crucial to keep up with the changes and developments in education and to implement these in the school to reach the standards required in the 21st century. Staff may be more willing to learn new things and attach more importance to their professional development at schools where distributed leadership is practiced, thus enabling their schools to become learning organizations. The fact that the school principal is a leader who follows the principles of distributed leadership can generate positive perceptions in teachers. Proponents of this idea claim that shared leadership is required since educational institutions are too complex to be managed with only one individual. Responsibility for managing various complex tasks in organizations is distributed among a myriad of individuals with different roles (Göksoy, 2005). As a matter of fact, these positive perceptions will be reflected in the success of learning schools. In this respect, this study aimed to identify the relationship between teachers' perceptions of school administrators' distributed leadership behaviors and their perceptions of schools as learning organizations. This study is deemed important since it will not only guide school principals in this respect but it will also contribute to the literature. When the studies carried out in Turkey shared leadership behaviors and means of work psychological safety perception in the relationship between turnover intention variable relationship (Yener,

2014), shared leadership, the relationship between family involvement and commitment to the school (Erol, 2016), psychological and shared leadership perceptions of teachers in schools capital (Şarbay, 2019), distribution of leadership scale adaptation (Şahin, Uğur, Dinçel, Balıkçı & Karadağ, 2014), the levels of primary school administrators to show shared leadership behaviors (Korkmaz, 2010), the levels of primary school administrators to show distributive leadership behaviors (Korkmaz & Gündüz, 2010), development of the shared leadership scale (Özer & Beycioğlu, 2013). outside of Turkey in adapting to comprehensive school reform school collaborative leadership perspective (Camburnu, Rowan & Taylor, 2003), the relationship between collaborative leadership and school success (Harris, 2004), views about sharing leadership with (Bolden, Petrov & Gosling, 2009) distribution leadership (Spillane, Diamond, Sherer & Coldren, 2005). It also increases the importance of shared leadership and study have not been seen in a study that examined the relationship between school learning is analyzed studies conducted in Turkey and abroad. The study set out to determine the relationship between teachers' perceptions of school administrators' distributed leadership behaviors and their perceptions on schools as learning organizations and to identify whether these perceptions differ according to the following demographic characteristics: gender, seniority, level of education, participation in in-service training events, number of projects implemented in the school, number of teachers in the school and habit of reading daily newspapers. In line with this general aim, answers to the following questions will be sought in the study:

    1. What are the perceptions of secondary schools teachers in the central district of Bolu Province in regards to distributed leadership and schools as learning organizations?

    2. Do secondary schools teachers' perceptions in regards to distributed leadership and schools as learning organizations significantly differ in terms of gender, seniority, level of education, participation in in-service training events, number of projects implemented in the school, number of teachers in the school and habit of reading daily newspapers?

    3. Is there a significant relationship between teachers' perceptions in regards to distributed leadership and schools as learning organizations?

Method

Research Model

Correlational survey model, which aims to determine the presence and degree of change between two or more variables, was used in this study. In correlational survey models, the variables to be correlated are collected separately and represented by using symbols to enable a relational analysis. Correlational survey model, can be implemented by using correlations or comparisons. This study made use of correlations to determine the relationship between two variables. In this type of correlational survey model, a relationship is said to exist between two variables when the value of one variable changes along with the value of the other variable (Karasar, 2005).

Research Ethics

Prior to the application of the scales used in the study, the ethics review of the study was conducted in the Ethics Committee of the Bolu Izzet Baysal University, and the official approval was obtained from the Bolu Governorship through the Bolu National Education Directorate along with the positive ethical report. The scales were used with permission.

Participants

The population of the study consisted of 600 teachers employed at secondary schools in the central district of Bolu in the 2018-2019 academic year. The study was carried out on the population and therefore no sampling was required. Of the 600 scales distributed, 268 were returned and evaluated.

Based on the analysis of participant teachers and the participating schools located in Bolu central province, it was noteworthy that some teachers (n = 60) were found to remark about the absence of project implementation in their schools. Another noteworthy finding was related to the high number of teachers who did not read daily newspapers (n = 90). Of the participants, 172 (64.2%) were female and 96 (35.8%) were male. When teachers' participation in in-service training was examined in terms of number of times of participation, it was found that 35 teachers (13.1%) attended 1-3 in-service training events, 96 teachers (35.8%) attended 4-7 in-service training events, 67 teachers (25%) attended 8-10 in-service training events and 86 teachers (26.1%) attended 11 or more in-service training events.

While 60 teachers (22.3%) stated that they did not have projects in their schools, 122 teachers (45.5%) reported that they had 1-3 projects and 86 teachers (32.1%) stated that they had 4 or more projects implemented in their schools. In terms of number of teachers employed at schools, 31 teachers (11.6%) reported the number of teachers in their schools to be 1-15, 101 teachers (37.7%) reported the number of teachers in their schools to be 16-30, 54 teachers (20.1%) reported the number of teachers in their schools to be 31-45, 62 teachers (23%, 1) reported the number as 46-60 and 20 (7.5%) teachers stated that there were 61 or more teachers in their schools. While the number of teachers who read daily newspapers was 178 (66.4%), the number of teachers who did not read daily newspapers was 90 (33.6%).

Instruments

The instrument included three parts. The first section consisted of seven questions about the demographic characteristics of teachers such as gender, seniority, education level, number of in-service training attendance, daily newspaper reading habits and variables such as the number of projects at school and the number of teachers in the school. The second part included the Distributed Leadership Scale while and the third part consisted of the Learning School Scale.

Distributed Leadership Scale

The scale with 10 items and a single dimension was developed by Özer and Beycioğlu (2013). The five-point Likert scale was graded as follows: never (1), rarely (2), sometimes (3), mostly/frequently (4) and always (5). While 10 points are the lowest score that can be obtained from the scale and it indicates the low level of perception towards the concept of distributed leadership, 50 points are the highest score that can be obtained from the scale and it indicates that distributed leadership perceptions are high. The reliability of the scale was calculated as .92 by Özer and Beycioğlu (2013) in the framework of reliability analysis of the original scale. The Cronbach Alpha reliability value was found to be .89 in the context of this study which shows the scale to be reliable.

Learning School Scale

The 5-point Likert scale which was developed by Uğurlu, Doğan and Yiğit (2014) consisted of 20 items and 4 sub-dimensions: Team Learning, Mental Models, Shared Vision, and Personal Mastery. The scale is scored by using the criteria of completely agree (5), agree (4), undecided (3), disagree (2) and completely disagree (1) and evaluated according to following criteria: Very Low (1.00-1.80); Low (1.81-2.60); Moderate (2.61-3.40) High (3.41-4.20) and Very High (4.21-5.00). As a result of the Cronbach Alpha reliability analysis conducted by Uğurlu, Doğan, and Yiğit (2014), Cronbach Alpha reliability value for team learning dimension was calculated as .89, mental models .89, shared vision .84, and personal mastery as .69. Cronbach Alpha reliability value for the whole scale was found to be .92. Based on the Cronbach Alpha reliability analysis carried out in this study, the reliability values were calculated to be .90 for team learning, .88 for mental models, .85 for the shared vision and .77 for personal mastery. The Cronbach Alpha value was found to be .93 for the whole scale. Based on these results, it can be argued that the scale is reliable.

Data Analysis

Before data analysis, the Kolmogorov-Smirnov test was used to determine whether the distribution of variables was normal and it was identified that the data did not display a normal distribution. Means were analyzed to identify teachers' perceptions in regards to learning schools, its subscales, and distributed leadership. Mann-Whitney U test was performed to determine the relationships between teacher perceptions on learning schools and distributed leadership according to gender and habit of reading the daily newspapers. Kruskal-Wallis-H test was performed to identify the analyzed relationship based on the following variables: number of in-service training events that the participants attended, number of projects implemented at the school and the number of teachers at the school. Spearman's rho correlation analysis was conducted in order to determine the relationship between teacher perceptions of learning schools and distributed leadership (Karasar, 2005).

Findings

Based on analysis results, this section presents teachers' perceptions on learning schools, its sub-dimensions and distributed leadership, displays the relationships between the perceptions of learning

school along with its sub dimensions and distributed leadership and demonstrates whether these perceptions differ according to gender, number of in-service training attended by participating teachers, number of projects implemented at the school, number of teachers at the school and habit of reading daily newspapers by using relevant tables. Table 1 presents teachers' perceptions of learning school and distributed leadership.

Table 1. Teachers' Perceptions of Learning Schools and Distributed Leadership

Scale	N	$\overline{X}$	Sd
Team Learning	268	4.07	0.64
Mental Models	268	3.90	0.76
Shared Vision	268	3.97	0.67
Personal Mastery	268	4.18	0.63
Learning school	268	4.04	0.57
Distributed leadership	268	4.26	0.62

According to Table 1, assessment of arithmetic means and standard deviations in combination demonstrates that teacher perceptions were homogeneous on learning schools, its sub-dimensions, and distributed leadership

It was observed that teachers had highly favorable perceptions of learning schools ($\overline{X}$ = 4.04). When teacher perceptions on the dimensions of learning schools were examined, it was found that their Team Learning ($\overline{X}$ = 4.07), Mental Model ($\overline{X}$ = 3.90), Shared Vision ($\overline{X}$ = 3.97) and Personal Mastery perceptions ($\overline{X}$ = 4.18) were found to be high. According to mean scores ($\overline{X}$ = 4.26) obtained from the scale, teachers responded with "always" regarding their perceptions on and the total score points to a high level of favorable perception ($\overline{X}$ = 42.61) in regards to distributed leadership among teachers. In other words, teachers had favorable perceptions related to school administrators'   distributed leadership behaviors.

Table 2 presents Mann-Whitney U results for teachers' learning school and distributed leadership perceptions based on gender.

Table 2. Mann-Whitney U Results for Teachers' Learning School and Distributed Leadership Perceptions based on Gender

Scale	Sub dimensions	Gender	n	$\overline{X}$	Rank Total	U	p
	Team Learning	Female	172	133,30	22927,50	8049,500	.733
		Male	96	136,65	13118,50		
	Mental Models	Female	172	132,25	22746,50	7868,500	.521
		Male	96	138,54	13299,50		
Learning Organization	**Shared Vision**	Female	172	138,08	23750,00	7640,000	.299
		Male	96	128,08	12296,00		
	Personal Mastery	Female	172	141,04	24118,00	7004,000	.042*
		Male	96	121,46	11660,00		
	Total	Female	172	134.90	23068,50	8053,500	.798
		Male	96	132.39	12709,50		
Distributed Leadership		Female	172	131.05	22541,00	7663,000	.328
		Male	96	140.68	13505,00		

Table 2 demonstrates that gender did not generate significant differences on teachers' perceptions of learning schools, on Team Learning, Mental Models and Shared Vision sub dimensions of learning schools and on distributed leadership (p>.05). Accordingly, it can be argued that female and male teachers had similar perceptions on learning schools, on Team Learning, Mental Models and Shared Vision sub dimensions of learning schools and on distributed leadership. It was identified that gender played a significant role in teacher perceptions in regards to Personal Mastery sub dimension of learning schools (p<.05). According to the findings, female teachers' personal mastery perceptions ($\overline{X}$ =141.04) were higher than those of male teachers ($\overline{X}$ =121.46).

Table 3 presents the results of the Kruskal-Wallis test conducted to explore teacher perceptions on learning schools and distributed leadership based on the number of in-service training events they attended.

Table 3. Kruskal-Wallis Results for Teachers Perceptions on Learning Schools and Distributed Leadership according to Number of In-Service Training Events Attended by Teachers

Sub dimensions	Number/in-service training	N	Rank Sum	sd	χ^2	p	Significant diff.
Team Learning	1-3	35	137,37	3	3,666	.300	-
	4-7	95	126,41				
	8-10	68	129,91				
	11 or more	70	148,56				
Mental Models	1-3	35	135,91	3	3,321	.345	-
	4-7	95	123,70				
	8-10	68	138,57				
	11 or more	70	144,71				
Shared Vision	1-3	35	138,51	3	6,904	.075	-
	4-7	95	118,77				
	8-10	68	141,13				
	11 or more	70	147,72				
Personal Mastery	1-3	35	139,93	3	6,425	.093	-
	4-7	95	119,51				
	8-10	68	136,03				
	11 or more	70	148,76				
Total Scale	1-3	35	136,31	3	5,378	.146	
	4-7	95	121,14				
	8-10	68	135,21				
	11 or more	70	149,14				
Distributed leadership	1-3	35	45,51	3	3,485	.323	-
	4-7	95	123,39				
	8-10	68	136,33				
	11 or more	70	142,48				

According to Table 3, the number of in-service training attendance did not generate any significant differences on teacher perceptions in regards to learning schools, Team Learning, Mental Models, Shared Vision and Personal Mastery sub dimensions of learning schools and distributed leadership (p>,05). Teachers who had attended the different number of in-service training events had similar learning school and distributed leadership perceptions.

Table 4 displays the analysis results for the Kruskal-Wallis test conducted to determine teacher perceptions on learning schools and distributed leadership based on the number of projects implemented at the school.

Table 4. Kruskal-Wallis Results for teacher Perceptions on Learning Schools and Distributed Leadership based on the Number of Projects Implemented at School

Scale	Number of projects	N	Rank Sum	sd	χ^2	p	Significant diff.
Team Learning	None	60	118,72	4	4,135	.388	-
	1-3	122	135,75				
	4 or more	86	128,55				
Mental Models	None	60	123,41	4	4,407	.354	-
	1-3	122	130,34				
	4 or more	86	129,34				
Shared Vision	None	60	116,52	4	5,208	.267	-
	1-3	122	138,09				
	4 or more	86	124,09				

				sd	χ2	p	
Personal Mastery	None	60	108,81	4	9,291	.074	-
	1-3	122	142,59				
	4 or more	86	129,95				
Learning school	Yok	60	112,97	3	6,424	.170	-
	1-3	122	136,46				
	4 or more	86	141,64				
Distributed Leadership	None	60	127,01	3	2,911	.573	-
	1-3	122	137,13				
	4-6	86	127,81				

Table 4 demonstrates that the number of projects implemented at schools did not create significant differences in teacher perceptions on learning schools, on Team Learning, Mental Models, Shared Vision and Personal Mastery sub dimensions of learning schools and on distributed leadership (p>,05). Teachers who were employed at schools that implemented the different number of projects were found to have similar perceptions of learning schools and distributed leadership.

Table 5 presents the results of the Kruskal-Wallis test performed to explore teacher perceptions on learning schools and distributed leadership according to the number of teachers employed at schools.

Table 5. Kruskal-Wallis Results for teacher Perceptions on Learning Schools and Distributed Leadership based on the Number of Teachers Employed at School

Scale	Number of teachers	N	Rank Sum	sd	χ2	p	Significant diff.
Team Learning	A.1-15	32	123,60	4	13,492	.009*	**E-A, E-B, E-C, E-D, C-B, D-C.**
	B.16-30	101	114,52				
	C.31-45	54	129,97				
	D.46-60	61	138,60				
	E.61 or more	20	179,53				
Mental Models	A.1-15	32	102,68	4	15,798	.003*	**B-A, D-A, E-A, C-B, E-C.**
	B.16-30	101	120,50				
	C.31-45	54	136,91				
	D.46-60	61	140,03				
	E.61 or more	20	174,13				
Shared Vision	A.1-15	32	107,58	4	12,564	.014*	**B-A, E-A, E-C.**
	B.16-30	101	144,20				
	C.31-45	54	120,24				
	D.46-60	61	132,37				
	E.61 or more	20	172,35				
Personal Mastery	A.1-15	32	115,73	4	7,557	.104	-
	B.16-30	101	146,24				
	C.31-45	54	122,77				
	D.46-60	61	126,59				
	E.61 or more	20	153,43				
Learning school	A.1-15	32	112,23	4	15,389	.004*	**E-A, E-C, E-D, C-B.**
	B.16-30	101	126,95				
	C.31-45	54	142,03				
	D.46-60	61	135,90				
	E.61 or more	20	178,80				

Distributed Leadership	A.1-15	32	117,40	4	15,204	.004*	**E-A, E-B, E-C, E-D.**
	B.16-30	101	136,26				
	C.31-45	54	127,14				
	D.46-60	61	126,87				
	E.61 or more	20	195,63				

According to Table 5, number of teachers employed at school caused a significant difference in teachers' perceptions of learning schools, on Team Learning, Mental Models and Shared Vision sub dimensions of learning schools and on distributed leadership (p<,05); however, there was no significant difference in Personal Mastery of sub dimension of learning schools based on the number of teachers employed at a given school (p>,05). According to Mann-Whitney U test results performed to determine the range of number of teachers that created a significant difference in teachers' perceptions of learning schools, on Team Learning, Mental Models and Shared Vision sub dimensions of learning schools and on distributed leadership, teachers employed at schools with a staff of 61 or more teachers had higher level of perceptions on learning schools compared to teachers employed at schools with a staff of 1-15 teachers ($\bar{x}$=20,68).

It was identified that learning school perceptions of teachers employed at schools with a staff 31-45 ($\bar{x}$=84.51) were higher compared to those employed at schools with a staff of 16-30 ($\bar{x}$=65.81); learning school perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=50.78) were higher compared to those employed at schools with a staff of 31-45 ($\bar{x}$=32.58) and learning school perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=51.05) were higher compared to those employed at schools with a staff of 46-60 ($\bar{x}$=37.70).

According to Mann-Whitney U test results performed to determine the range of teachers that created a significant difference in teachers' perceptions on the Team Learning sub dimension of learning schools, team learning perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=32.68) were higher compared to those of teachers employed at schools with a staff of 1-15 ($\bar{x}$=21.69); team learning perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=77.68) were higher compared to those of teachers employed at schools with a staff of 16-30 ($\bar{x}$=57.90); team learning perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=50,98) were higher compared to those of teachers employed at schools with a staff of 31-45 ($\bar{x}$=32,51); team learning perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=50,70) were higher compared to those of teachers employed at schools with a staff of 46-60 ($\bar{x}$=38,53); team learning perceptions of teachers employed at schools with a staff of 31-45 ($\bar{x}$=84.00) were higher compared to those of teachers employed at schools with a staff of 16-30 ($\bar{x}$=66.78) and team learning perceptions of teachers employed at schools with a staff of 46-60 ($\bar{x}$=64,38) were higher compared to those of teachers employed at schools with a staff of 31-45 ($\bar{x}$=51,75).

According to Mann-Whitney U test results performed to determine the range of teachers that created a significant difference in teachers' perceptions on the Mental Models sub dimension of learning schools, mental model perceptions of teachers employed at schools with a staff of 16-30 ($\bar{x}$=71,28) were higher compared to those of teachers employed at schools with a staff of 1-15 ($\bar{x}$=50,94); mental model perceptions of teachers employed at schools with a staff of 46-60 ($\bar{x}$=51,31) were higher compared to those of teachers employed at schools with a staff of 1-15 ($\bar{x}$=38,39); mental model perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=34,13) were higher compared to those of teachers employed at schools with a staff of 1-15 ($\bar{x}$=20,76); mental model perceptions of teachers employed at schools with a staff of 31-45 ($\bar{x}$=83,79) were higher compared to those of teachers employed at schools with a staff of 16-30 ($\bar{x}$=67,18) and mental model perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=49,63) were higher compared to those of teachers employed at schools with a staff of 31-45 ($\bar{x}$=33,01).

According to Mann-Whitney U test results performed to determine the range of teachers that created a significant difference in teachers' perceptions on the Shared Vision sub dimension of learning schools, shared vision perceptions of teachers employed at schools with a staff of 16-30 ($\bar{x}$=70,79) were higher compared to those of teachers employed at schools with a staff of 1-15 ($\bar{x}$=52,53); shared vision perceptions of teachers

employed at schools with a staff of 61 or more ($\bar{x}$=33,48) were higher compared to those of teachers employed at schools with a staff of 1-15 ($\bar{x}$=21,18) and shared vision perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=47,93) were higher compared to those of teachers employed at schools with a staff of 31-45 ($\bar{x}$=33,64).

According to Mann-Whitney U test results performed to determine the range of teachers that created a significant difference in teachers' perceptions on distributed leadership, distributed leadership perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=35,25) were higher compared to those of teachers employed at schools with a staff of 1-15 ($\bar{x}$=20,03); , distributed leadership perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=83,35) were higher compared to those of teachers employed at schools with a staff of 16-30 ($\bar{x}$=56,57); distributed leadership perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=51,98) were higher compared to those of teachers employed at schools with a staff of 31-45 ($\bar{x}$=32,14) and distributed leadership perceptions of teachers employed at schools with a staff of 61 or more ($\bar{x}$=56,55) were higher compared to those of teachers employed at schools with a staff of 46-60 ($\bar{x}$=36,65).

Table 6 demonstrates the results of Mann-Whitney U test performed to examine teachers' perceptions of learning schools and distributed leadership according to their habit of reading daily newspapers.

Table 6. Results of the Mann-Whitney U Test Performed to Examine Teachers' Perceptions on Learning Schools and Distributed Leadership according to Their Habit of Reading Daily Newspapers

Scale	Sub dimensions	Reading newspapers	n	$\bar{X}$	Rank Sum	U	p
Learning organization	**Team Learning**	Yes	178	136,55	24442,50	6524,500	.112
		No	90	120,61	10010,50		
	Mental Models	Yes	178	135,67	24285,00	6682,000	.188
		No	90	122,51	10168,00		
	Shared Vision	Yes	178	135,39	24234,50	6732,500	.212
		No	90	123,11	10218,50		
	Personal Mastery	Yes	178	138,28	24614,00	6091,000	.020*
		No	90	115,39	9577,00		
	Total	Yes	178	137,14	24411,50	6293,500	.044*
		No	90	117,83	9779,50		
Distributed Leadership		Yes	178	133,40	23341,00	7663,000	.728
		No	90	130,88	11112,00		

According to Table 6, while the variable of reading daily newspapers created significant differences in teachers' perceptions on learning school and its sub dimension of personal mastery (p<.05), it did not cause any meaningful differences on Team Learning, Mental Models and Shared Vision sub dimensions of learning school and on distributed leadership perceptions (p>.05). It was found that learning school perceptions of teachers who read newspapers daily ($\bar{X}$=137,14) were higher than those who did not ($\bar{X}$=117,83) and personal mastery perceptions of teachers who read newspapers daily ($\bar{X}$=138,28)were also higher than the teachers who did not have a habit of reading daily newspapers ($\bar{X}$=115,39).

Results of the correlation analysis conducted to determine the relationship between teacher perceptions on learning school, its sub dimensions and distributed leadership are presented in Table 7.

Table 7. Correlation Table for the Relationships between Teacher Perceptions on Learning School and Teacher Perceptions on Distributed Leadership

Variable	TL	MM	SV	PM	LS
1.DL	0.52**	0.58**	0.50**	0.37**	0.62**

*p<.05**. Correlation is significant at 0.01 level of significance (2-tailed).
Note. TL: team learning; MM: mental models; SV: shared vision; PM: personal mastery; LS: learning school; DL: Distributed Leadership.

Table 7 presents a positive and moderate relationship between teachers' perceptions on learning schools and on distributed leadership (r= .62, p< .05). Positive and moderate relationships were identified between teachers' team learning perceptions and their distributed leadership perceptions (r= .52, p< .05); teachers' mental models perceptions and their distributed leadership perceptions (r= .58, p< .05); their shared vision perceptions and their distributed leadership perceptions (r= .50, p< .05) and their personal mastery perceptions and their distributed leadership perceptions (r= .37, p< .05).

Discussion and Conclusion

The study aimed to determine the relationship between teachers' perceptions of distributed leadership and their perceptions on schools as learning organizations and to identify whether these perceptions differ according to the following demographic characteristics: gender, seniority, level of education, participation in in-service training events, number of projects implemented in the school, number of teachers in the school and habit of reading daily newspapers.

The results show that teachers' learning school perceptions and their perceptions of learning school sub-dimensions such as Team Learning, Mental Models, Shared Vision, and Personal Mastery were high. Many studies conducted to identify teacher perceptions on learning schools identified the high level of favorable perceptions (Alp, 2007; Bal, 2011; Banoğlu, 2009; Doğan & Yiğit, 2015; Jokıc, Cosıc, Sajfert, Pecujlıja & Pardanjac, 2012; Yıldız, 2011). The results of this study corroborate these findings as well. Doğan and Yiğit (2015) explained the need for assessing learning schools as functional structures with a high level of teacher perceptions on learning schools. In this sense, learning schools can improve the functionality of schools and quality of education. In addition, the fact that schools are open to learning in the 21st century, where transformation and innovation are rapid, is important in terms of integrating them into these transformations and innovations.

Teachers' perceptions of team learning, which is a learning school sub-dimension, were found to be high. Studies in literature conducted to investigate learning organizations (Alp, 2007; Banoğlu, 2009; Doğan & Yiğit, 2015; Erdem & Uçar, 2013; Güçlü & Türkoğlu, 2003; Kılıç, 2009) identified high teacher perceptions towards team learning. In their studies, Güleş (2007), Subaş (2010) and Bal (2011) identified low levels of team learning in teachers. When teachers are open to common goals and orientations, share their experiences, new knowledge and practices with each other, carry out their work as a team and support each other, the schools will definitely transform into learning schools because these teacher behaviors reflect the characteristics of the learning school's team learning dimension (Uğurlu, Doğan, & Yiğit, 2014).

This study also identified a high level of teacher perceptions in regards to mental models, a learning school sub-dimension. Güçlü and Türkoğlu (2003), Banoğlu (2009), Erdem and Uçar (2013) and Doğan and Yiğit (2015) also found that teachers' perception of mental models was high. Contrary to these studies, some studies in the literature identified low levels of teacher perceptions in regards to mental models (Alp, 2007; Güleş, 2007; Kılıç, 2009; Subaş, 2010; Bal, 2011). The teacher can develop their learning potentials and transform their schools into learning schools via the availability of learning opportunities offered at the school, administrators' support for teacher aspirations and acceptance of each teacher as equal and respected individuals. These are the important elements of mental models which constitute a significant dimension of learning schools. In this respect, it may be easier for teachers with high levels of perception of mental models to help transform their schools into learning schools.

Teachers' shared vision perceptions, another sub dimension of learning schools, were identified to be high in the study. Literature presents some studies where teachers' shared vision perceptions were identified to be low (Aksu, 2013; Bal, 2011; Erdem and Uçar, 2013; Güçlü & Türkoğlu, 2003; Güleş, 2007; Kılıç, 2009; Subaş, 2010). However, Banoğlu (2009), Doğan and Yiğit (2015) reported that teachers had high perceptions of shared vision dimension of learning schools. Ensuring active participation of teachers in the process of identifying the

school vision by taking their ideas will facilitate the adoption of the school vision by teachers and encourage them to take part in tasks to realize the adopted vision. In this sense, determining the school vision with the contribution of teachers and informing the new teachers about the school vision can contribute to activities undertaken to transform the school into a learning organization. the school is a learning school. Schools have to be organizations that are open to transformation and innovation. In this context, schools can achieve high standards of quality and become learning schools only by changing their visions as a result of innovations and advances. When schools create a vision based on lifelong learning, the number of activities and projects based on research and learning will increase, making it easier for schools to become learning schools.

Based on research results, teacher perceptions about personal mastery, a sub-dimension of learning schools, were high. In this regard, it can be argued that teachers follow professional studies and publications related to their field and consequently develop themselves and learn new information by consulting their colleagues. It can also be argued that teachers participate in seminars, courses, and workshops that contribute to their professional development and that they exchange information with their colleagues who work at other schools. It is believed that these elements are effective for schools to be learnings organizations. Doğan and Yiğit's (2015) study, which reported a high level of personal mastery perception among teachers, corroborate the findings of this study. Literature also presented studies which identified low levels of personal mastery perceptions for teachers (Bal, 2011; Banoğlu, 2009; Erdem & Uçar; 2013; Güleş, 2007; Subaş, 2010). The fact that studies produced different results may be due to differences in study samples, differences in the use of individual skills and competencies by teachers in the years when the studies were conducted, differences in professional development opportunities that are offered or easier access to professional publications or courses in the 21st century.

According to the research results, teachers' distributed leadership perceptions were high. Teachers regard school administrators as leaders who practice distributed leadership. School administrators can follow distributed leadership practices by ensuring the participation of teachers, students and parents in decision-making processes and by allowing the opportunity for stakeholders to contribute to the solution of the problems to achieve school's objectives. When school administrators behave in this manner, they can be leaders who practice distributed leadership by transferring their powers and responsibilities. In addition, support by school administrators for the educational activities of teachers, support of teachers to the school administration, completion of school tasks in collaboration and interaction with teachers will facilitate the tasks of the school administrator. Otherwise, the school administrator may not be able to handle all these tasks alone. Hoy and Miskel (2008) stressed the importance of distributed leadership practices in schools by stating that it is difficult for a single person to achieve success in tasks and actions required at schools. Higgins, Ishimaru, Holcombe, and Fowler (2011) stated that the highly empowering leadership practices are necessary for structuring learning schools. In this sense, it can be argued that school administrators' distributed leadership practices will increase the learning potential of schools because, school administrators can demonstrate that teachers, parents and other stakeholders are valued by modeling participative behaviors in communication, decision making, transformation, innovation, and problem-solving. As a result, teachers, parents, and other stakeholders will strive to contribute more to the development of their schools, which will consequently help increase their learning needs and therefore they will study, read and exchange ideas at a greater extent. As a matter of fact, it can be said that schools with participative school administrators can progress faster in their course to becoming learning schools.

According to the results of this study, female and male teachers' perceptions of learning schools and its sub-dimensions of team learning, mental models and shared vision perceptions were similar. Studies in the literature (Aksu, 2013; Doğan &Yiğit, 2015; Subaş, 2010; Töremen, 1999; Yiğit, 2013), are parallel to the findings in this study. However, based on the findings of this study, female teachers' perceptions of personal mastery were higher than those of male teachers. In this sense, this study differs from the above-mentioned studies. According to this result, it can be argued that compared to male teachers, female teachers are more interested in trying to renew themselves by keeping up with the developments in their field, more willing to learn new things by asking about them, more involved in courses and training programs that contribute to their professional development and they exchange information with their colleagues in other schools. Accordingly, it can be thought that female teachers are more willing to develop their professional capacities. Although female and male teachers' distributed leadership perceptions were found to be similar, male teachers' distributed leadership perceptions were slightly higher than those of female teachers. Yılmaz (2003) also stated in his study that gender did not make a significant difference in participants' perception of distributed leadership. In this respect, the study supports the results of this research. Parallel to the findings of this study, the study conducted by Bakır (2013) reported that the male teachers had higher perceptions in regards to distributed leadership compared to female teachers. This difference may be related to the fact that the majority of school administrators are male and that male teachers spend more time with the school administrators outside the school. The findings show

that teachers with different in-service training attendance backgrounds had similar perceptions in regards to learning schools, learning school sub-dimensions (team learning, mental models, shared vision, personal mastery) and distributed leadership. It can be argued that lack of impact in in-service training events to develop learnings school and distributed leadership perceptions may be related to a lack of desired productivity in these training. It is believed that in-service training programs can be organized in a manner to allow teachers to develop themselves and help them improve their competences. red to female teachers. When in-service training programs are delivered effectively, they can be instrumental in transforming schools as learnings organizations. Literature review points out that Kılıç (2009) identified teachers follow the publications related to their professional development and participate in seminars and panels organized in their schools to improve themselves. Aksu (2013) and Yıldız (2011) determined that in-service training does not contribute to teachers' team learning. Studies in the literature related to the learning schools are similar to the results of this study. However, analysis of teacher perceptions of learning schools based on the number of attendances in in-service training activities demonstrated that perceptions of teachers who attended in-service training events 11 times or more were higher than those who attended a smaller number of in-service training. This finding indicates that in-service training is important to inform teachers about new developments and contribute to their professional improvements in the 21st century which is called the information age.

It was found in the study that teachers who worked at schools with the different number of current projects had similar perceptions in regards to learning schools and learning school sub-dimensions (team learning, mental models, shared vision, personal mastery). Projects are important activities for the development of schools because each new project provides new learning opportunities. Projects can enable teachers to work together as a team and to present their individual competencies by exchanging ideas. Teachers can help their colleagues learn by sharing their knowledge, skills, and competencies. In addition, teachers who cannot participate in the project can be included in the project by explaining the practices and implementations to support their learning. When teachers are assigned project tasks ranging from project preparation to dissemination to the use of project results in a just and fair manner, teachers will feel valued and their participation in activities will increase as well as their motivation to learn. Teachers who participate in dissemination activities to inform other teachers at schools in the province or the districts will have increased satisfaction from learning and they will seek new projects to improve themselves. This will also improve their learning and research skills. In line with these explanations, it can be argued project preparation and implementation is important elements for schools to become learning organizations.

The study also pointed out that teachers who worked in schools with the different number of projects had similar perceptions of distributed leadership. Projects can only be successful with cooperation and teamwork. Since the project production and implementation is not an activity that can be achieved by the school administrator alone, it is believed that the distributed leadership practices, which are carried out by administrators by transferring power to teachers by benefiting from their knowledge, skills, and expertise, are very important in the success of projects. In this sense, it can be argued that projects are important activities at schools since distributed leadership practices will contribute positively to the projects at the school and project preparation and implementation stages will be a good opportunity for schools to transform into learning organizations and for school administrators to experiment distributed leadership practices.

According to study results, learning school perceptions of teachers differed based on the number of teachers they worked with. Teachers who worked in schools with a high number of teachers had higher perceptions in regards to schools as learning organizations compared to teachers who worked in schools with fewer teachers. In his study, Yiğit (2013) stated that as the number of teachers in schools decreases, the perception of learning increases and this finding can be explained by the high level of communication in small groups. As a matter of fact, teachers may communicate better with each other in small groups, however, it can be argued that the group's learning level may be higher in larger groups because there is diversity and there are teachers with different skills, knowledge, and competence. In bigger schools, it may be difficult for teachers to get to know and communicate with each other, but the school administrator can use participative leadership features to create a place where teachers can communicate, engage in teamwork and organize activities that will enable teachers to learn from each other. Teachers who engage in information exchange with their colleagues with the help of these activities will have increased motivation for learning and will be able to improve themselves. In addition, when we consider the fact that larger schools have a higher number of teachers who attend courses, seminars, postgraduate education or who act as role models with their research or publications, it can be argued that these teachers will increase their colleagues' willingness to learn since they will set an example to other teachers or they exchange ideas with each other. As a matter of fact, the result obtained in this study also supports these assumptions.

According to the results of the study, it was found that team learning perceptions of teachers who worked at schools with 61 or more teachers were higher than teachers who had 1-15,16-30, 31-45 and 46-60 teachers in their schools and that team learning perceptions of teachers who worked in the schools with 31-45 and 46-60 teachers were higher than teachers who worked with 16-30 teachers at their schools. The fact that the teachers who worked at schools with 61 or more teachers had higher perceptions in this sub dimension may be related to the ease of teamwork at these schools due to the higher number of teachers and consequent increase in learning motivation as a result of achievement in teamwork and related tasks. Teamwork is important in terms of increasing teacher motivation by ensuring productivity in organizations and revealing and sharing knowledge and skills (Küçük, 2008). In this regard, it may be easier to create teams in bigger schools and teachers can find opportunities to learn within the team.

According to the results of the study, it was found that mental model perceptions of teachers who worked at schools with 16-30, 46-60 and 61 or more teachers were higher than teachers who had 1-15 teachers in their schools and mental model perceptions of teachers who worked at schools with 31-45 and 61or more teachers were higher than teachers who worked with 16-30 teachers. In this context, it can be argued that teachers who worked in schools with 16-30, 46-60 and 61 or more teachers are supported by their administrators, that they criticize their administrators when the situation calls for it, they can find learning opportunities and each teacher is treated equally, valued and respected. It can also be argued that teachers who worked in schools with 1-15 teachers may not have sufficient support from their administrators compared to teachers working in other schools, they cannot criticize their administrators and cannot find sufficient learning opportunities at their schools. It is believed that if school administrators at schools with a small number of teachers support teachers and provide them with learning opportunities, it will be easier for teachers to engage in activities that will make them feel valuable. In this sense, it is noteworthy that teachers in bigger schools had the higher level of perceptions. The differences caused by school size may be due to the fact that teachers in bigger schools may have more opportunities to learn from each other. In addition, higher mental models perception may be related to the fact that teachers in bigger schools are more diverse in relation to interests, abilities, knowledge, skills, and desires and that school administrators may assign tasks according to their interests, talents, knowledge, skills and wishes of teachers in these schools. Also, high level of perceptions in regards to mental models may be related to the fact that schools with a higher number of teachers produce more projects and social activities and therefore school administrators support these teachers to a higher extent.

According to the results of the study, it was found that shared vision perceptions of teachers who worked at schools with 16-30 and 61 or more teachers were higher than teachers who had 1-15 teachers in their schools and shared vision perceptions of teachers who worked at schools with 61or more teachers were higher than teachers who worked with 31-45 teachers. Based on the result, it can be argued that a higher number of teachers may result in more knowledge about the school vision and that transformation-based vision can be established more easily at the school. Since the probability that finding teachers with various knowledge, skills, , and experiences is higher in larger schools, it is natural that change is regarded as valuable and important in these schools and that teachers employed at these schools are open to innovations and aim for lifelong learning practices.

This study found that distributed leadership perceptions of teachers differed based on staff size. According to the results of the study, it was found that distributed leadership perceptions of teachers who worked at schools with 61 or more teachers were higher than teachers who had 1-15, 16-30, 31-45 and 46-60 teachers in their schools. Schools may be regarded as the most appropriate organizations for distributed leadership practices due to both the large size and diversity of their stakeholders. By utilizing distributed leadership practices at schools, it is possible to improve the quality of both the schools and education and therefore schools may be more effective. In this respect, by practicing distributed leadership, administrators who work with a larger staff size can ensure that teachers at the school benefit from each other's experiences and ideas with the help of projects and activities that require cooperation and teamwork and facilitate achievement of school goals and objectives and the establishment of a learning school. Since it will be harder to realize school goals with a small number of teachers, larger staff sizes may be regarded as positive.

While team learning, mental models and shared vision perceptions of teachers were similarly based on the habit of reading daily newspapers, their learning school perceptions in general and personal mastery perceptions differed. Learning school perceptions and personal mastery perceptions of teachers who read daily newspapers were found to be higher than those who did not read daily newspapers. Güçlü and Türkoğlu (2003) reported that teachers followed professional publications and identified no differences between teachers based on reading daily newspapers. Keeping up with the current events and issues and transferring what is learned to students and colleagues may be useful to act as role models and also facilitate their learning. It is also believed that reading

daily newspapers will contribute to teachers' learning since it will allow discussions and exchange of information with colleagues about the current events.

Research result shows teachers' distributed leadership perceptions were similar regardless of their habit of reading daily newspapers. However, distributed leadership perceptions of teachers who had the habit of reading daily newspapers were slightly higher than those who did not read newspapers daily. School administrators can follow successful and effective distributed leadership practices by benefiting from teachers' knowledge, , and expertise. In this respect, reading daily newspapers can be regarded as important since it helps increase teachers' cultural information and provide them with information about the developments of the world which can be then transferred to the school setting. Hence, distributed leadership perceptions of teachers who had the habit of reading daily newspapers may be higher. Since school administrators who practice distributed leadership principles ensure participation of teachers by taking their knowledge and experiences into consideration to solve problems encountered at school and since reading daily newspapers contribute to knowledge acquisition for teachers, it is natural that the teachers with the habit of reading daily newspapers will have higher distributed leadership perceptions.

Positive and moderate level relationships were identified in the study between teachers' learning school and distributed leadership perceptions, team learning, mental models, shared vision and personal mastery perceptions and distributed leadership perceptions. Distributed leadership practice at schools, directly and indirectly, affect student achievement (Silins & Mulford, 2002). In this context, it can be argued that school administrators' participative distributed leadership practices will contribute to the success of educational implementations and student achievement since there is a positive and moderate level relationship between learnings organizations and distributed leadership.

Based on the results of the research to increase female teachers' distributed leadership perceptions, school administrators can assign more tasks or give more responsibilities to female teachers or ensure that they take part in more activities and take active roles in these activities. In order to increase teachers' learning school perceptions, the number of in-service training can be increased and teachers' participation can be encouraged by planning these training based on needs. Schools can be useful in creating learning schools by producing and implementing projects and facilitating distributed leadership practices of school administrators. The administrators of schools with few teachers can organize events, seminars, workshops, projects etc. in order to raise the perception of learning organization and distributed leadership in these schools. Teachers should be encouraged to read daily newspapers by establishing newspaper corners in schools. Since there is a relationship between the learning organization and distributed leadership, school administrators can benefit from distributed leadership practices to transform their schools into learning schools.

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The Relationships between Preschoolers'
Play Behaviors, Social Competence
Behaviors and Their Parents' Parental
Attitudes

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The Relationships between Preschoolers' Play Behaviors, Social Competence Behaviors and Their Parents' Parental Attitudes[*]

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Abstract

The aim of this study is to examine the relationships between preschoolers' play behaviors, social competence behaviors and their parents' parental attitudes. In this study, correlational survey model was used. The target population of the study consists of 12.183 children attending preschool education institutions in the central districts of Van province and their parents. The sample of the study consists of 1.042 participants (521 children and their parents) determined by stratified sampling method. In this study, "Play Behaviors Scale for 36-71 Months Old Children", "Social Competence and Behavior Assessment-30 Scale" and "Parental Attitude Scale" were used for data collection. In data analysis, Pearson Product Moment Correlation Coefficient was used. As a result of the study, it was concluded that there are significant relationships between children's play behaviors, social competence behaviors and parents' parental attitudes. In order for parents to adopt the right attitude, it is advisable to prepare seminars, courses and parent education programs on child growing up attitudes.

Key words: Preschoolers, Play behaviors, Social competence behaviors, Parental attitudes, Preschool education

Introduction

Play, which is an instinctive activity, is the most important communication tool for the child (Güneş, 2004). Play is a vital necessity for human beings and maintains its importance even if it differs in every period of life. Being one of the children's rights, play has universal superiority. As a child-specific area, play is powerful enough to affect all developmental skills necessary for the child's life. It is the most effective learning tool for the children to recognize themselves, establish healthy relationships with their friends and comply with the rules of the society in which they live (Zembat, 2013).

Piaget and Smilansky grouped the play types into functional, structural, dramatic and canonical plays according to the content and structure of the play. These plays vary according to social and non-social play behaviors. According to play structure and content, play behaviors are grouped as social, reticent, solitary, parallel and rough tumble play behaviors (Cited in Aslan, 2013; Parten, 1932). *Social play* provides children with a unique environment that supports all their development. Social play, where interaction with friends is intense, develops child's cooperation, reconciliation and problem solving skills. In these plays, which are related to social competence and social skills, the child initiates communication, distributes roles and displays a compromise attitude in resulting conflicts. In *reticent behavior* involving purposeless behaviors, the child is content to watch without accompanying his/her friends playing in the classroom. Reticent behavior is associated with shyness and social fear. The child, who displays *solitary play behaviors,* prefers to play alone even if he/she has the opportunity to play with his/her friends. Although he/she is in the same environment as his/her friends, he/she quietly plays with toys or tries to discover objects (Coplan, Rubin & Fandlay, 2006). The children, who display *parallel play behaviors*, plays for different purposes although they share the same toys and playground with the children in the play environment. They can communicate eye-to-eye with their friends, laugh with them, talk about their activities and ask questions, but this communication is often not meaningful. Communication is not mutual and continuous (Aslan, 2013). *Rough tumble play behaviors* include emotional expressions and energetic movements. It looks like a real fight as the child exhibits behaviors such as running, catching, pushing and

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kicking. However, the child has playful expressions on his/her face even though he/she exhibits behaviors similar to fighting. After these behaviors, they continue their plays with fun (Pellegrini, 2002).

The child becomes aware of his/her repressed feelings by turning his anger, fears into action in play. Thus, the child learns to express and manage emotions in the play (Kuru, 2009). Therefore, it is thought that social competence behaviors and play behaviors of children are interrelated. Social competence is a prerequisite for the skills required to maintain a healthy life. Social competence, defined as an individual's ability to manage his/her own emotions, behaviors and social relationships or to exhibit sufficient social behaviors, is very important for the psychological development of children (Çorbacı, 2008; Şendil, 2010). Individuals with high social competence have realistic goals and can motivate themselves to achieve these goals. These individuals, who are solution-oriented, do not give up in the difficulties they face and try to complete their missing aspects. As they have a high sense of self-confidence, they establish healthy relationships with the society. They are successful and happy individuals in their social and business life. On the other hand, individuals with low social competence tend to give up what they want to do in order to avoid difficulties in their lives. When they face any difficulties, they give up and complain instead of struggling. They have difficulty in setting goals and reaching their goals. They are aggressive because they cannot communicate with people in a healthy way. It is inevitable for individuals with low social competence to experience behavioral problems (Israel, 2007).

Social competence behaviors are categorized into three groups as social competence, aggression and anxiety-introversion behaviors. One of the characteristics expected from children with high *social competence* is high level of social maturity. Social maturity is the individual's ability to show the expected compliance with the rules adopted in the society (Aral & Baran, 2011). *Aggression,* seen in children, is a condition that causes the individual harm his/her environment by displaying negative behaviors such as anger (Özdemir, 2014). The family's being overly tolerant to the child and doing whatever he/she wants causes the child to show anger behaviors to the usual difficulties (Aydın, 2004). One of the reasons of aggressive behaviors is that the family constantly prevents the child's behavior, criticizes, punishes and neglects his developmental needs (Aral, Ayhan & Türkmenler, 2004). The lack of effective communication between family members and the inability of the child to express himself/herself adversely affect the child's communication and social skills. Anger behaviors occur in the child if he/she has difficulty in expressing himself/herself in social settings. Children who do not know how to manage their feelings of anger may display aggressive behaviors towards themselves or their surroundings (Yumuş, 2013). *Anxiety-introversion behaviors* are defined as shyness within the group, feeling unhappy and depressive (Baltaş, 2002). Parental attitude is one of the most important factors in having anxiety. The parents' attitude towards their children based on criticism makes the child feel unworthy and causes lack of self-confidence. The parents' ignoring the child's wishes, not allowing him/her to take responsibility and make mistakes, and their constant comparison with his/her friends is one of the reasons of social anxiety. This anxiety that occurs during childhood causes the child to become an introverted person in his/her future life (Bozkurt, 2016).

Since the children try to get to know themselves and their environment in the preschool period which is the basis of life, they tend to ask questions to the people around. Children who have to communicate with their peers and adults constantly suppress this deficiency when they have communication problems by showing aggressive or recessive behaviors (Ateş, 2011). Behavioral problems that arise when the child has low social competence have a negative impact on the future life of the child and prevent him/her from adapting to society (Zhang et al., 2014). In order for the social skills to be permanent, the children must actively develop these skills in the family, school and daily life. The children become aware of their social competence as a result of the interaction with their friends in a play environment where they freely exhibit their emotions and behaviors. The children also learn to evaluate themselves in plays where they have the opportunity to express themselves, regulate their feelings, freely express their opinions on a topic or situation. It is important for children to regulate their emotions and express themselves in the environment in terms of social development. As children learn to share, help, obey rules, understand differences, cooperate; social skills develop and social skills affect play behaviors (Çorapçı, Aksan, Yalçın & Yağmurlu, 2010; Haktanır, 2011; Yavuzer & Demir, 2016). Therefore, it is seen that there is a need to reveal the relationships between social competence behaviors and play behaviors of children attending preschool education institutions.

The social competence of the child is shaped by the interaction with the family and peers with whom he/she is in close relationship. Since socialization starts from birth, the mother-child interaction in the first years of life is important in the social development of the child. If there is a bond of love and trust between mother and child, it develops qualified social relations with the child's environment (Akbaş & Budak, 2011). Communication in the family, parents' reactions to the events/situations, language and strategies used in case of conflict affect the child's relationship with friends. The child makes his/her first socialization experience with his/her parents. Thanks to the bond of love and trust established by the positive attitude of the parent, the child makes efforts to establish social relations with the environment. The distance between mother, father and child with judicial and

critical parental attitude causes the child to develop a negative attitude towards his/her environment and hinder socialization (Yavuzer & Demir, 2016).

Parental attitudes are grouped in different ways. In this study, parental attitudes were grouped in four dimensions as democratic, authoritarian, overprotective and permissive attitude based on target literature and "Parental Attitudes Scale" used in this study. Parents, who adopt *democratic attitude,* prepare an appropriate educational environment for their children and take care of every activity they take. Their positive feedback encourages their children to learn. Thanks to the common attitude adopted by both mother and father towards the child, the child can distinguish between right and wrong behaviors (Çağdaş & Seçer, 2011). Children who grow up with democratic parental attitude become individuals with high social competence, high self-esteem and responsibility (Erkan, 2013; Pekşen Akça, 2012). These children, who are in harmony with the social environment, can express their feelings and thoughts, produce solutions to the problems they face, generally have the desired competence in the fields of social, emotional and cognitive development (Özkafacı, 2012). Children of parents with *authoritarian parental attitude* become anxious and unhappy. As their communication skills are insufficient, they resort to violence in anger. These children, who lack self-confidence, are afraid to establish social relations (Erkan, 2013; Santrock, 1997). Children, who are forced to obey every rule, tend to be quiet, gentle, honest, careful as well as overly sensitive, shy and behave under the influence of their friends when they enter the social environment (Yavuzer, 2003). Since parents, who exhibit *overprotective parental attitude*, think and decide instead of children; creative thinking, critical thinking and problem solving skills of children do not develop. These individuals, who cannot make decisions on their own, tend to escape the responsibilities they should take (Pekşen Akça, 2012). The child, constantly protected by his/her parents, do not know how to handle the difficulties he/she face in his/her present and future life, and do not seek any solution (Şendil, 2003). Undesirable behaviors such as high levels of anxiety and insecurity occur in children because they are over-controlled (Erkan, 2013; Karabulut Demir & Şendil, 2008; Maccoby & Martin, 1983). Thus, children who cannot develop self-confidence and communication skills will be an individual who cannot express themselves, communicate positively and adapt to the environment. On the other hand, parents with *permissive parental attitude* generally think that they apply contemporary practices. Even if they sometimes think that they should set up rules against their children, children are not affected by their parents' behaviors because they remain undecided (Yörükoğlu, 1987). Children, who grow up with permissive parental attitude, have problems in their social life outside the family environment because they do not realize the positive and negative behaviors. Children, who have problems in internal motivation and social relations, lack self-confidence. They have difficulty in taking responsibility in their future lives and tend to display aggressive behaviors (Erkan, 2013; Altay & Güre, 2012).

Based on the literature, it can be said that parental attitudes have an effect on children's social competence behaviors. Therefore, it is thought that parents' parental attitudes and social competence, play behaviors of the children are interrelated. From this point of view, the aim of this study is to investigate the relationships between preschoolers' play behaviors, social competence behaviors and parents' parental attitudes. The children demonstrate their social skills that they have gained as a result of the bond with their family, in their relationships with friends. Environments, where the child's interactions with friends are most intense, are play activities. The behaviors the child exhibits in his/her plays where he/she has the opportunity to freely turn all his/her developmental skills into action are thought to be related to the child's social competence and parents' parental attitudes. Therefore, this study is important in terms of revealing the relationships between preschoolers' play behaviors, social competence behaviors and parents 'parental attitudes.

Although there are studies in the literature examining the relationship between parental attitude and social competence behaviors of children (Andı, 2014; Coplan et al., 2002; Çetinkaya, 2016; Ogelman et al., 2013; Yener, 2014) and the studies examining the relationship between children's social competence behaviors and play behaviors (Coplan et al., 2001; Farver et al., 1995; Rubin et al., 1995; Spindrad et al., 2004; Uren & Stagnitti, 2009), no study has been reached investigating the relationship between parental attitude and children's play behaviors. In this respect, this study examining the relationships between play behaviors, social competence behaviors of children attending preschool education institutions and parents' parental attitudes is expected to contribute to the target literature.

Method

Research Model

In this study, correlational survey model was used. Correlational survey model aims to determine the existence and degree of the relationship between multiple variables (Karasar, 2015). In this study, correlational survey model was used because it aims to reveal the relationships between preschoolers' play behaviors, social competence behaviors and parents' parental attitudes.

Population and Sample

The study population of this study consists of children attending preschool education institutions in the central districts (Ipekyolu, Tusba and Edremit) of Van province in 2017-2018 academic year and their parents. According to the data obtained from Van Provincial Directorate of National Education, 12.183 children are educated in preschool education institutions affiliated to Ministry of National Education; 6286 in Ipekyolu district, 2779 in Tusba district and 3118 in Edremit district. In this study, it was decided to determine sample from the study population because it is difficult to reach the whole population in terms of time, labor and opportunities.

Stratified sampling method was used in this study. In stratified sampling; the population is divided into sub-groups by considering various factors affecting the study problems and a random sample is taken from each group (Padem, Göksu & Konaklı, 2012). Therefore, in this study, preschool institutions in the districts were divided into three groups as low, medium and high socio-economic development level. In determining the socio-economic development level of the schools, expert opinion was used and in this direction, variables such as economic and educational level of the school environment were taken into consideration. Then, a certain number of preschool institutions from each level were randomly selected.

In determining the sample size, it is important to identify a sample that is as large as possible and representative of the population in terms of time and possibilities (Fraenkel, Wallen & Hyun, 2012). Therefore, a total of 521 children attending preschool institutions and their parents from three districts formed the sample of the study. While sampling according to districts, the ratio in the study population and the number of children at high, medium, low socio-economic development level were taken into consideration. According to Çıngı (1994), if population size is 10. 000 at .05 significance level, sample size of 370 participants is sufficient to represent the population (Cited in Büyüköztürk et al., 2016). In this case, it can be said that the sample of this study is large enough to represent the population. Table 1 shows the distribution of the children attending preschool education institutions which constitute the sample of this study.

Table 1. Distribution of children in the sample

Characteristics	Category	Number (N)	Percentage (%)
Gender	Female	260	49.9
	Male	261	50.1
Age	36-48 months	58	11
	49-60 months	281	54
	61 months and over	182	35
District	Ipekyolu	298	57
	Tusba	99	19
	Edremit	124	24
Socio-economic development level of the school	High	212	41
	Medium	150	29
	Low	159	30
	Total	**521**	**100**

According to the data in Table 1, approximately half (260; 49.9%) of the children attending preschool education institutions in the sample are female and approximately half of them (261; 50.1%) are male. 298 (57%) of the children are studying in Ipekyolu district, 99 (19%) in Tusba district and 124 (24%) in Edremit district. 212 (41%) of the children are studying in schools with high socio-economic development level, 150 of them (29%) in schools with medium socio-economic development level and 159 of them (30%) in schools with low socio-economic development level.

Table 2 shows the distribution of the parents of the children in the study sample according to gender, education level, number of children and income level.

Table 2. Distribution of parents in the sample

Characteristics	Category	Number (N)	Percentage (%)
Gender	Female (Mother)	493	95
	Male (Father)	28	5
Education Level	Illiterate	50	10
	Primary school	171	33
	Secondary school	108	21
	High school	111	21
	Bachelor's degree	81	15
Number of Children	One child	55	11
	Two children	237	46
	Three children	133	25
	Four children or more	96	18
Income Level	0-1499 TL	181	35
	1500-2499 TL	149	28
	2500-3499 TL	82	16
	3500 TL and above	109	21
	Total	521	100

According to the data in Table 2, 493 (95%) of the parents are mother and 28 (5%) of them are father. 50 (10%) of the parents are illiterate, 171 (33%) are primary school graduates, 108 (21%) are secondary school graduates, 111 (21%) are high school graduates and 81 (15%) have bachelor's degree. 55 (11%) of the parents have one child, 237 (46%) have two children, 133 (25%) have three children and 96 (18%) have four or more children. 181 (35%) of the parents have between 0-1499 TL monthly income, 149 (28%) have between 1500-2499 TL monthly income, 82 (16%) have between 2500-3499 TL monthly income and 109 (21%) have a monthly income of 3500 TL and above.

Data Collection Tools

Play Behaviors Scale for 36-71 Months Old Children: The scale, developed by Aslan (2017) in order to evaluate play behaviors of 36-71 months old children, consists of 21 items. The scale, scored by the teacher, is in a five-point Likert format and consists of five sub-dimensions: social, reticent, solitary, parallel and rough tumble play behaviors. The Cronbach Alpha internal reliability coefficients were found as .73 for the total scale, .92 for reticent, .84 for solitary, .89 for parallel, .90 for social and .96 for rough tumble play behaviors. In this study, Cronbach Alpha internal reliability coefficients were calculated for the sub-dimensions as .84, .74, .86, .86 and .93, respectively. These values indicate that the scale is a reliable measurement tool.

Social Competence and Behavior Assessment-30 Scale: The scale, developed by La Freniere and Dumas (1996) and adapted into Turkish by Çorapçı, Aksan, Arslan-Yalçın and Yağmurlu (2010), is aimed to determine emotional, behavioral problems such as anger-aggression and anxiety-introversion, and the quantity of social skills that are expected to develop in preschool period. The scale, scored by the teacher or parent of the child, is in six-point Likert format and consists of three sub-dimensions. The Cronbach Alpha internal reliability coefficients for the "social competence", "anger-aggression" and "anxiety-introversion" sub-dimensions were found as .88, .87, and .84, respectively. In this study, Cronbach Alpha internal reliability coefficients were calculated as .90, .87 and .88, respectively. These values indicate that the scale is a reliable measurement tool.

Parental Attitude Scale: The scale, developed by Karabulut Demir and Şendil (2008) in order to determine the parental attitudes of parents in raising preschool children and being a five-point Likert format, consists of four sub-dimensions of "democratic attitude" (17 items), "authoritarian attitude" (11 items), "overprotective attitude" (9 items), "permissive attitude" (9 items) and 46 items. The Cronbach Alpha internal reliability coefficients of the scale were found as .83 for the "democratic" sub-dimension, .76 for the "authoritarian" sub-dimension, .75 for the "overprotective" sub-dimension, and .74 for the "permissive" sub-dimension. In this study, Cronbach

Alpha internal reliability coefficients of the scale were calculated for the sub-dimensions as .82, .81, .75 and .71, respectively. These values indicate that the scale is a reliable measurement tool.

The study data were collected in May and June within 2017-2018 academic year. In data collection process, the schools in the districts were divided into three levels as low, medium and high socio-economic development level by taking expert opinion and a total number of 25 preschool institutions from each level (independent kindergartens and kindergartens within primary schools) were selected randomly. Each teacher was asked to determine eight children (four male and four female) by randomly selecting from the class list. Parental attitude scale was sent to the parents of the selected children. Then, teachers were asked to fill in the play behaviors and social competence behaviors scale for each child whose parent filled the parental attitude scale. A total of 190 teachers were contacted and feedback was received from 144 teachers. Then, 46 teachers from the schools with high, medium and low socio-economic development level were not included in the study because their students' parents did not fill the parental attitude scale. In this case, data about approximately three or four students were collected from each teacher. Data collection took approximately eight weeks.

Data Analysis

In this study, Pearson Product Moment Correlation Coefficient values were calculated to determine whether there is a significant relationship between play behaviors, social competence behaviors and parental attitudes. These values were interpreted as low between '0.00-0.29', medium between '0.30-0.69' and high level between '0.70-1.00' (Büyüköztürk, 2013).

Results

Table 3 shows the Pearson Product Moment Correlation Coefficients calculated to examine the relationship between play behaviors, social competence behaviors of children attending preschool education institutions and their parents' parental attitudes.

Table 3. Pearson Product Moments Correlation Coefficients of Variables

Scales and sub-dimensions	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
A. Parental Attitude Scale								
1. Democratic	-.155[**]	-.093[*]	-.071	.151[**]	.013	.148[**]	-.131[**]	-.154[**]
2. Authoritarian	.198[**]	.058	.070	-.103[*]	.029	-.105[*]	.131[**]	.148[**]
3. Overprotective	-.005	-.061	.012	.086	-.025	.055	-.007	-.004
4. Permissive	.077	.054	.019	-.076	-.014	-.016	.090[*]	.098[*]
B. Play Behaviors Scale								
5. Reticent behaviors	1.00	.569[**]	.258[**]	-.557[**]	-.057	-.441[**]	.214[**]	.687[**]
6. Solitary play		1.00	.501[**]	-.292[**]	-.030	-.178[**]	.173[**]	-.426[**]
7. Parallel play			1.00	.053	-.021	.020	.129[**]	.155[**]
8. Social play				1.00	.070	.539[**]	-.142[**]	-.575[**]
9. Rough tumble play					1.00	-.238[**]	.475[**]	.032[**]
C. Social Competence Scale								
10. Social competence						1.00	-.451[**]	-.522[**]
11. Anger-aggression							1.00	.359[**]
12. Anxiety-introversion								1.00

*p<.05 *, p<.01***

According to the data in Table 3, there is a low level, positive and significant relationship between democratic parental attitude and children's social play behaviors (r = .151; p <.01), social competence behaviors (r = .148; p

<.01); while there is a low level, negative and significant relationship between democratic parental attitude and children's reticent behaviors (r = -.155; p <.01), solitary play behaviors (r = -.093; p <.05), anger-aggression (r = -.131; p <.01), anxiety-introversion behaviors (r = -.154; p <.01).

There is a low level, negative and significant relationship between authoritarian parental attitude and children's social play behaviors (r = -.103; p <.05), social competence behaviors (r = -.105; p <.05); while there is a low level, positive and significant relationship between authoritarian parental attitude and children's reticent (r = .198; p <.01), anger-aggression (r = .131; p <.01), anxiety-introversion behaviors (r = .148; p <.01).

It is seen that there is a low level, positive and significant relationship between permissive parental attitude and children's anger-aggression (r = .090; p <.05), anxiety-introversion behaviors (r = .090; p <.05).

There is a medium level, negative and significant relationship between children's social competence behaviors and reticent behaviors (r = -.441; p <.05); there is a low level, negative and significant relationship between children's social competence behaviors and solitary play behaviors (r = -.178; p <.05), rough tumble behaviors (r = -.238; p <.05); while there is a medium level, positive and significant relationship between children's social competence behaviors and social play behaviors (r =. 539; p <.05).

There is a low level, positive and significant relationship between children's anger-aggression behaviors and reticent (r = .214; p <.01), solitary (r = .173; p <.01), parallel play behaviors (r = .129; p <.01); there is a medium level, positive and significant relationship between children's anger-aggression behaviors and rough tumble play behaviors, (r = .475; p <.01); while there is a low level, negative and significant relationship between children's anger-aggression behaviors and social play behaviors (r = -.142; p <.01).

There is a medium level, positive and significant relationship between children's anxiety-introversion behaviors and reticent (r = .687; p <.01), solitary play behaviors (r = .426; p <.01); there is a low level, positive and significant relationship between children's anxiety-introversion behaviors and parallel play behaviors (r = .155; p <.01); while there is a medium level, negative and significant relationship between children's anxiety-introversion behaviors and social play behaviors (r = -. 575; p <.01).

Discussion and Conclusion

In this study, it was concluded that there are significant relationships between children's social competence behaviors and parents' parental attitudes. In other words, it was determined that as the democratic parental attitudes increased, children's social competence behaviors increased, but their anger-aggression and anxiety-introversion behaviors decreased. As the authoritarian parental attitudes increased, children's social competence behaviors decreased. In addition, it was concluded that as the authoritarian and permissive parental attitudes increased, children's anger-aggression and anxiety-introversion behaviors increased. In the literature, there are studies examining the relationship between parental attitude and social or problematic behaviors of children. In parallel with the results of this study, Andı (2014) found a low level, negative and significant relationship between democratic parental attitude and destructive-demanding behavior of the child. Dursun (2010) found that children, whose mothers adopt authoritarian attitude, exhibited more aggressive behaviors. In their study, Ogelman et al. (2013) concluded that there is a negative and significant relationship between children's social skills and mothers' permissive, authoritarian attitude. Yener (2014) found a low level, positive and significant relationship between children's social cooperation, social acceptance, independence skills and parents' democratic attitudes. Coplan, Hastings, Lagace-Seguin and Moulton (2002) concluded a positive relationship between parents' democratic attitudes and social development of the child. Jiménez-Barbero, Ruiz-Hernández, Llor-Esteban and Waschgler (2016) found significant relationships between externalization with high impulsivity, ingrained attitudes toward violence and inconsistent parental styles. Similarly; de Vries, Hoeve, Stams and Asscher (2016) concluded that low parental monitoring plays an important role in mediating the association between poor attachment bonds and delinquency. Gülay (2011) found a positive and significant relationship between mothers' authoritarian attitude and children's positive social behaviors; and a positive and significant relationship between mothers' authoritarian, permissive attitudes and children's aggression behaviors. In contrast to the results of this study, Çetinkaya (2016) found that there is no relationship between mothers' attitude of raising children and social-emotional adjustment of children. In their study, Altay and Güre (2012) concluded that children, whose mothers exhibit democratic parental attitude, have more negative relations with their peers than those whose mothers have permissive parental attitude.

When the results of similar studies in the literature and this study's results are evaluated, it can be said that as democratic attitude of the parents increases, the children's social competence behaviors increase, but their anger-aggression and anxiety-introversion behaviors decrease; as parents' authoritarian and permissive attitude

increase, the anxiety-introversion and anger-aggression behaviors of children increase, but their social competence behaviors decrease. Parents adopting authoritarian attitude display strict, normative behaviors towards their children and their sensitivity to their children's feelings are quite low. Children, who grow up with authoritarian attitude, tend to exhibit aggressive behaviors because they have anxiety and communication problems. Similarly, in permissive parental attitude, behaviors of parents such as doing whatever they want, not being able to make rules, and not reacting to any negative behavior including aggressive behaviors negatively affect children's social skills (Altay & Güre 2012; Erkan, 2013; Santrock, 1997; Segrin & Flora, 2019). On the other hand, in democratic parental attitude, the parent's sensitivity to the feelings and thoughts of the child, giving the child the right to speak will make the child feel valuable and establish positive relations with the environment. In addition, the parent's explanation of negative behaviors to the child together with their reasons makes it easier for the child to quit negative behaviors and gain positive behaviors (Erkan, 2013; Pekşen Akça, 2012; Yener, 2014). Therefore, according to the results of this study, it can be said that children who grow up with authoritarian and permissive parental attitudes tend to exhibit negative social behaviors such as anxiety-introversion and aggression because of being forced and under pressure or being overly free. On the other hand, it can be thought that the positive communication that the children establish with their families in democratic parental attitude reflects positively on their social skills.

In this study, it was concluded that there are significant relationships between children's social competence behaviors and play behaviors. In other words, it was determined that as children's social competence behaviors increased, their reticent, solitary and rough tumble play behaviors decreased, but their social play behaviors increased. It was concluded that as children's anger-aggression behaviors increased, their reticent, solitary, parallel and rough tumble play behaviors increased, but their social play behaviors decreased. In addition, it was concluded that as children's anxiety-introversion behaviors increased, their reticent, solitary and parallel play behaviors increased, but their social play behaviors decreased. In parallel with the results of this study, Koçyiğit, Sezer and Yılmaz (2015) concluded that children's social skills increase with play skills, and children's play skills are lower who exhibit anxiety-introversion and anger-aggression behaviors more frequently. Uren and Stagnitti (2009) found a positive and significant relationship between children's social competence behaviors and play behaviors. Farver et al. (1995) concluded that children who exhibit social competence behaviors more frequently tend to play complex games. In their study, Rubin et al. (1995) found that children playing alone had low social communication. Coplan, Gavinski-Molina, Lagace-Seguin and Wichmann (2001) found a negative and significant relationship between passive play behaviors and shyness of girls, and between solitary play behaviors and social competence behaviors of boys. Similarly, in a study by Spindrad et al. (2004), it was concluded that there is a significant relationship between children's solitary play behaviors and asocial behavior, and reticent behaviors was associated with low social competence. Wolfberg, DeWitt, Young and Nguyen (2015) concluded a relation between symbolic play and social/cognitive abilities of the children.

When the results of similar studies in the literature and this study's results are evaluated, it is seen that there are positive and significant relationships between children's social competence behaviors and social play behaviors; between children's anger-aggression, anxiety-introversion behaviors and reticent, solitary, parallel, rough tumble play behaviors. Communicative social plays are the ones in which two or more children exhibit mutual cooperation, sharing, problem solving behaviors. This social interaction in the plays affects children's acquiring friends, self-confidence development and social acceptance (Aslan, 2013; Butler, 2016; Coplan, Rubin & Fandlay, 2006). Although socially shy children want to play with their friends, it is thought that they tend to avoid communicating with their friends due to social interaction fear (Rubin & Asendorpf, 1993). Therefore, it can be said that social competence behaviors of the child increase thanks to social plays and children with high social competence tend to social plays more. On the other hand, it is thought that children who exhibit anxiety-introversion behaviors tend to play alone or watch only when they are in contact with their friends because of the problems such as lack of self-confidence, negative self-perception, and social anxiety. In addition, it can be said that children who exhibit anger-aggression behaviors frequently show rough tumble behaviors in play environment more often because of the fact that rough tumble play contain behaviors similar to aggressive behaviors such as running, pushing and chasing.

In this study, it was concluded that there are significant relationships between children's play behaviors and parents' parental attitudes. In other words, it was determined that as the democratic parental attitudes increased, children's social play behaviors increased, but their solitary play behaviors decreased. Furthermore, as the authoritarian parental attitudes increased, children's reticent behaviors increased, but their social play behaviors decreased. In the literature, no studies have been reached examining the relationship between parental attitude and children's play behaviors. However, there are studies indicating that there is a significant relationship between parental attitude and children's social competence behaviors (Andı, 2014; Coplan et al., 2002; Çetinkaya, 2016; de Vries et al., 2016; Jiménez-Barbero et al., 2016; Ogelman et al., 2013; Yener, 2014). In these studies, it was concluded that democratic parental attitude increases children's social competence behaviors, authoritarian and permissive attitude increases children's anxiety-introversion and anger-aggression

behaviors. In addition, there are studies indicating that there is a significant relationship between social competence behaviors and play behaviors of children (Coplan et al., 2001; Farver et al., 1995; Rubin et al., 1995; Spindrad et al., 2004; Uren & Stagnitti, 2009; Wolfberg et al., 2015). As a result of these studies, it was found that social competence behaviors were associated with social plays, and there are significant relationships between anxiety-introversion, anger-aggression behaviors and reticent, solitary, parallel, rough tumble play behaviors. In this case, it can be said that parental attitude is also related to play behaviors as it is related to social competence behaviors of the children. When the results of this study are evaluated, it can be considered that the parents who adopt democratic attitude increase social skills of the child and thus children with high social competence exhibit social play behaviors more frequently. It is thought that as parents who adopt authoritarian parental attitude do not take into account the developmental needs of children, show a more rigid and normative attitude to their children and do not establish a healthy communication with their children, thus these behaviors prevent their children from gaining the social skills necessary for social interaction with their peers. Thus, it can be said that this causes children with low social competence to move away from social plays and tend to reticent behaviors.

Recommendations

According to the results of this study, it was concluded that there are significant relationships between preschool children's social competence behaviors, play behaviors and their parents' parental attitudes. In order for parents to adopt the right attitude, it is advisable to prepare seminars, courses and parent education programs on child growing up attitudes. This study is limited to examining the relationships between play behaviors, social competence behaviors of children and parental attitudes. Studies examining the relationship between children's play behaviors, social competence behaviors, parental attitudes and different development areas of children such as language and cognitive development can be conducted.

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A Meta-Analysis of the Effects of Some Factors on Teachers' Classroom Management Skills

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Abstract

The purpose of this study is to examine the effect of personal, professional and organizational factors on teacher's classroom management skills in the Turkish context. Meta-analyses were performed to find out the effect sizes and understand the trend in substantive findings across classroom management skills studies. Data consisted of articles, master theses, and dissertations which were retrieved from the Turkish Higher Education Council (THEC) National Theses Center, ULAKBIM (a database for articles indexed by TUBITAK-ULAKBIM), THEC Academic, and Google Scholar databases. The main dataset in this study consisted of 59 independent studies. Findings revealed that the effect of personality traits of teachers, professional, and organizational factors on teachers' classroom management skills was found at medium level. Emotional traits of teachers', sub-dimension of personality traits, produced a greater effect size than cognitive skills and personality type. Teachers, who feel satisfied with their job, work in a positive school climate, get motivated by their top managers and share common values and culture with their colleagues, tend to use CMSs more effectively. While occupational burnout, low teaching performance, and poor organizational communication have a negative but significant effect, job satisfaction, school climate, organizational motivation, shared organizational values and rules have a moderately positive and significant effect on teachers' CMSs.

Key words: Classroom management skill, personal, professional, organizational, factors, meta-analysis.

Introduction

Classroom management, as the best way of an effective teaching and learning, transforms student potentials and provide outputs such as knowledge, skill and behavior (Aydın, 2017; Balay, 2012). In addition, it also has a great impact on developing students' academic knowledge, cognitive competence and affective qualifications (Dincer & Akgun, 2015). Within this context, having desirable classroom management skills, for teachers and teacher candidates, is critical. Generally, classroom management is defined as an extensive body of activities including systematic implementation of principles, concepts, theories, models, and techniques related to functions of planning, organizing and evaluation to accomplish the specific educational goals (Erdogan, 2011). According to Brophy (1986) classroom management doesn't mean just trying to minimize the negative behaviors of students and directing students to cooperate to minimize these behaviors, but it means all academic abilities in teaching and learning process and organizing activities that make students take part in these activities at maximum level. Considering Brophy's definition, classroom management consists of five skills:

   i.   Classroom management should be based on creating positive teacher-student and student-student relationship.

   ii. Students' personal needs should be on top of the agenda in classroom management process.

   iii. An effective classroom management requires responding academic needs of students both individually and as a group by using teaching methods that provide upper learning.

   iv. Classroom management requires student involvement in creating code of conduct, and also employing techniques related to group management.

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    v.   Classroom management requires guiding students with the aim of improving and evaluating their negative attitudes (Jones & Jones, 2004).

In the last decades, globalization and the dramatic changes in technology have brought effective human resources on a critical focus. Effective management in organizations and employees' skills are closely related with each other. For that reason, in terms of organizational efficiency and productivity, employees' skills have become very important. Since, identifying and developing skills of employees in organizations has become a strategic factor for the maintenance of organizational efficiency and productivity (Kececioglu, & Erkan, 2013; Ünal, 2013). From this point of view, teacher's proficiency skills have to be evaluated for a sustainable school efficiency and productivity. Ministry of National Education (MoNE) and Turkish Council of Higher Education (THEC) have conducted various studies to identify the competencies of both teachers and teacher candidates in the last decade (MoNE, 2006; 2017; THEC, 2011). The MoNE (2017) classified teachers' general competency fields as professional knowledge, professional skills, and professional norms and attitudes. Furthermore, professional skills field was classified as planning teaching-learning processes, creating learning environment, managing teaching-learning processes (classroom management) and assessment and evaluation skills. In recent years, studies, conducted by the MoNE in Turkey for identifying the levels of competency, efficiency and performance students, has also taken great attention. Within this context, MoNE and THEC have updated bachelor degree programs to provide efficient teacher training courses which are the most important dimensions of teacher efficiency. Moreover, MoNE and THEC have also conducted some important studies to make teachers question their competences, identify their current status, and create developmental goals related to teaching profession (MoNE, 2006, 2017; THEC, 2011, 2018).

Teachers are expected to manage their classes in an effective way that students can benefit from the schooling activities in maximum level. Hence, teachers should master in classroom management as it is a mandatory component of effective teaching and learning. A vast amount of literature also emphasizes that besides students' general level of intelligence, home environment, socioeconomic status or motivation, teachers can also make a great difference in terms of student outcome or achievement (Henson & Chambers, 2003; Hester, Gable, & Manning, 2003; Marzano & Marzano, 2003; Muijs & Reynolds, 2001; Ozdemir, 2019). This emphasis on teachers' classroom management skills is also specified by TALIS 2018 results. According to TALIS results, teachers' professional development significantly associated with many dimensions of classroom management skills and their participation in professional development goes hand in hand with their mastery of a wider array of methods to use in the classroom (OECD, 2019; Peña-López, 2009). In other words, having classroom management skills is highly crucial for the effectiveness of teaching profession. Classroom management literature includes studies that researching impacts of effective classroom management skills and classroom management programs on students' academic achievement levels, affective dimension and other behaviors (Marzano, Marzano, & Pickering, 2003; Mashburn, Hamre, Downer, & Pianta, 2006; Poulou, 2017; Mujis & Reynolds, 2002; Stronge, Ward, & Grant, 2011; Korpershoek, Harms, de Boer, van Kuijk, & Doolaard, 2016). As generally emphasized by various studies, teachers' influence over students is related directly to teaching-learning styles, teaching content and curriculum, interaction styles with one another and perception of the world around them, and that influence may be more powerful than we think and long lasting (Darling-Hammond, 2001; Marzano, Marzano, & Pickering, 2003; Poulou, 2017). Being aware of that influence is also important for creating positive attitude toward learning and achieving academic and social outcomes (Stronge, 2018). Classroom management includes various dimensions such as arranging classroom environment, time management, behavior management, teaching-learning management, communication and motivation management (Aydın, 2017; Uğurlu, 2016). Classroom management efficacy means the information, skills, norms, attitudes and beliefs of teachers related to those dimensions. Effective management of teaching and learning process is an important factor for teaching profession. Considering all of these, classroom management skills and the factors, which effect those skills predominantly, should be examined. Studying the effects of these factors on teachers' classroom management skills is considered highly important in terms of creating positive classroom environment. This study is an attempt to analyze the effects of factors which are related with teachers' classroom management skills.

Purpose of the Study

The purpose of this study is to examine the effect of personal, professional and organizational factors on teacher's classroom management skills. Those factors include personal traits of teachers, professional and organizational factors. The following research questions guided this study;

1.   Do the factors (personal, professional, organizational factors) have effect on teacher's classroom management skills?

2. Do the effect sizes of personal, professional and organizational factors differ significantly in terms of moderator variables?

Methodology

Beginning in the 1970s, meta-analysis is the method that combines effect sizes from different studies researching the same question to get better estimates of the population effect sizes (Field, 2009). Meta-analysis is frequently applied as a means of understanding the trend in substantive findings across studies (Glass & Smith, 1977). It requires systematic treatment of relevant studies and produces a measure of overall impact or the relation of the construct of interest (Robinson, Lloyd & Rowe, 2008). Meta analyses help researcher combine the statistical results of independent studies conducted in a specific field or subject and give a chance to make statistical analyses on those results to reach an extensive finding (Borenstein, Hedges, Higgins & Rothstein, 2009; Dincer, 2018; Lipsey & Wilson, 2001). As the present study aimed at examining the effects of personal, professional, and organizational factors on teacher's classroom management skills, meta analyses were conducted as the best way to find out the effect sizes and understand the trend in substantive findings across classroom management skills studies.

Data Collection

Data consisted of articles, master theses and dissertations which were retrieved from the THEC National Thesis Center, ULAKBIM (a database for articles indexed by TUBITAK-ULAKBIM), THEC Academic, and Google Scholar databases. The keyword searches included the following terms both in Turkish and English: *classroom, classroom management, classroom skill(s), classroom management competency, classroom technique(s), teaching management, teaching ability, classroom strategy/strategies.* The keywords were searched by both of the researchers, and were also saved to analyze and compare the potential publications to be included in the meta-analyses. Data covered the publications between 2007 and 2019. The last search dated back to June, 2019.

Inclusion Criteria: The criteria set for the study is as follows;

1. Studies that report correlation coefficient between personal, professional or organizational culture and CMSs.
2. Participants should be in service teachers.
3. Studies should be published between 2007 and 2019.
4. The written language of independent studies should be Turkish or English.
5. Sampling should be from the educational districts in Turkey.
6. Studies should be conducted in pre-primary, primary and secondary levels of education.

Data pool consisted of 89 independent studies after keyword searches. By considering the inclusion criteria, researchers examine all the studies comparatively and 30 of them were excluded because of some deficiencies such as not having plenty of data for statistical analysis, inappropriate sampling or duplicated studies. Studies which were duplicated (k=19), conducted in universities or special education levels (k=3), or have samples from teacher candidates (k=8) were excluded from the data pool. After that process, 59 studies were left as the general dataset of this meta-analysis study and were coded into the coding form developed by the researchers. Datasets were categorized in three sub categories according to the outputs of the studies a) personality traits (PTs) included studies that focused on the relation between CMSs and teacher's personality traits, b) professional factors (PFs) included studies that focused on the relation between CMSs and professional factors, and c) organizational factors (OFs) included studies that focused on the relation between CMSs and organizational behavior. In sum, studies in the dataset include data about the factors effecting teacher's classroom management skills. Descriptive statistics were presented in Table 1. Appendix 1 includes studies comprising the dataset of this study.

Table 1. Overview of the characteristics of the CMSs studies

Year of Publication	PTs	PFs	OB	Participant Profile	PTs	PFs	OB
	f	f	f		f	f	f
2007-2011	6	2	4	Mixed Branches*	13	8	6
2012-2016	9	5	11	Primary Teachers	7	6	7
2017-2019	7	12	4	Pre-primary Teachers	2	5	5
Total	**22**	**19**	**18**	**Total**	**22**	**19**	**18**
SES				**Institution Type**			
Level 1	10	4	8	Pre primary	2	5	5
Level 2	5	5	4	Primary	7	6	7
Level 3	7	10	5	Middle School	5		1
Unspecified			1	High School	2		
				Mixed	6	8	5
Total	**22**	**19**	**18**	**Total**	**22**	**19**	**18**
Type of Publication							
Dissertation		1					
Research Article	7	8	4				
Master Theses	15	10	14				
Total	22	19	18				

* includes other branches such as Mathematics, English or Literature.

Coding Process: Coding is necessary in meta-analysis since it allows researchers to make complex data clearer and appropriate for processing (Karadag, İsçi, Öztekin and Anar, 2016). In this study, a coding form was developed in Excel by the researchers which include some basic information about independent studies. Codes involve information about the year of publishing, participant profile, SES, publication and institution type. Teacher behaviors were coded by considering the problem and sub problem statements of the studies. Factors effecting classroom management skills were coded as a) Personality traits (PTs), b) Professional factors (PFs), and c) Organizational factors (OFs), and codes were unified under the relevant sub theme. *Personality traits (PTs)* were coded into three different behavioral dimensions as cognitive, emotional and personality type. Cognitive dimension involves problem solving abilities, critical and analytical thinking abilities, and emotional dimension is related with self-efficacy belief, emotional intelligence and other behaviors such as happiness level, motivation and humor styles. *Professional factors (PFs)* are about communication and collaboration with stakeholders, leadership in classroom, teaching-learning styles and teaching attitude. *Organizational factors (OFs)* refer to job satisfaction, burnout, school climate, organizational communication and motivation, and some elements of organizational culture such as shared organizational values and rules. Educational districts were taken into consideration in accordance with the Official Gazette (2002) classification. That classification was made with the support of Turkish Statistics Institute by State Planning Organization in 2002 to determine the economic and socio-cultural structure of districts (Şengül, Eslamian & Eren, 2013).

Data Analysis

Meta-analyses were performed using the program Comprehensive Meta-Analysis (CMA 2.2). Since the diversity of basic research characteristics in the meta-analysis datasets (Karadag, Bektaş, Çogaltay & Yalçın, 2015), we conducted statistical analyses under the random effects model. Pearson correlation coefficient (r) was calculated as an effect size for each study. Correlation coefficients change between -1 and +1. The distribution interval of correlation coefficient universe is relatively narrow and this also causes narrowness in the effect size variation (Borenstein et al. 2009). So, correlation coefficients were transformed into Fizher's z value (Fz) as a common way to solve that problem (r=Fz=ES). When the studies included more than one effect size, we calculated the mean effect size of the study. Unit of analysis of this research is the "study". Statistical analyses were conducted on Fz=ES. Cohen's (1985) value intervals were considered for the interpretation of effect sizes.

Validity and reliability of mean size effects are related with publication bias (Üstün & Eryilmaz, 2014). Publication bias may occur when the studies in published literature is systematically unrepresentative of the population of completed studies (Rothstein, Sutton & Borenstein, 2005). Firstly, to check the publication bias, the funnel plot distribution related to effect sizes was examined. Then, the Duval and Tweedie trim-fill (DTTF) statistical test was performed and interpreted. In this study, moderator analysis was conducted to control the

variation between mean effect sizes. According to the codes used in this study, behavior type, participant profile, institution type, SES of the educational district, and publication year were used as moderator variables.

Heterogeneity, in meta-analytic statistics, refers to the sampling error or the variation of the outcomes between independent studies (Borenstein et al, 2009; Erdogan & Kanık, 2011; Kurt, 2009). Here, I square statistical technique, a simple expression of the inconsistency of studies' results, was used to decide whether the results are heterogeneous or not (Higgins & Thompson, 2002). The results were examined by considering the value intervals suggested by Higgins, Thompson, Deeks, and Altman (2003) as % 25-% 50 low; %51 - %75 medium; and upper than %76 high. Q between groups test was used to check the statistical variation effect sizes distribution according to categoric moderators (Üstün & Eryılmaz, 2014). For continuous moderators, meta-regression technique was performed (Borenstein et al., 2009). When the intra group effect sizes were smaller than two, they were not included in the statistical analyses.

In meta-analysis, publication bias is a critical issue that should be checked before the analysis process. In this study, the researchers followed two steps to check the publication bias. The first step included the funnel plot distribution related to effect sizes of the three sub datasets. The Figures were presented below respectively.
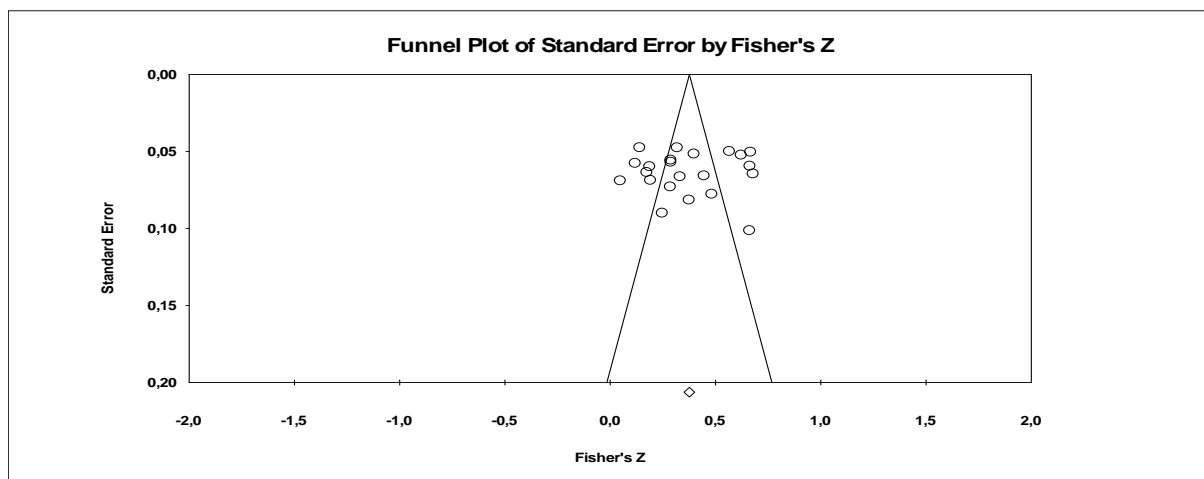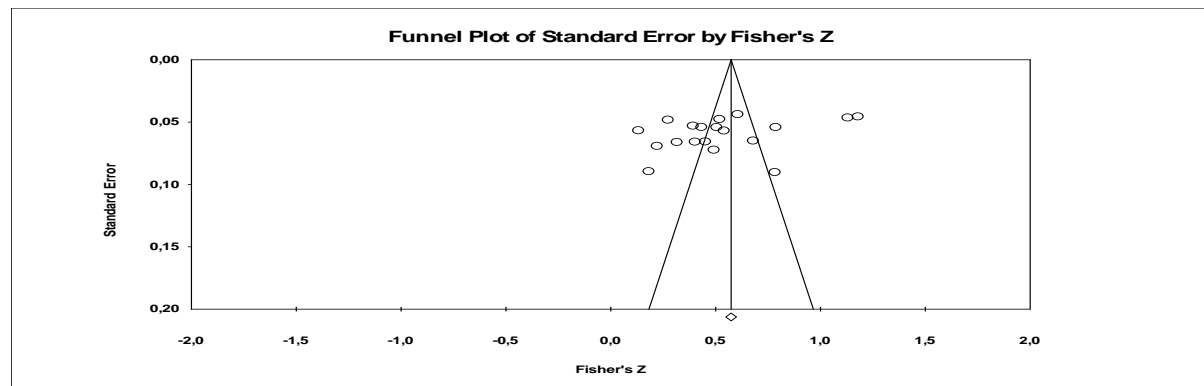

Figure 1. Funnel plot of PTs sub dataset

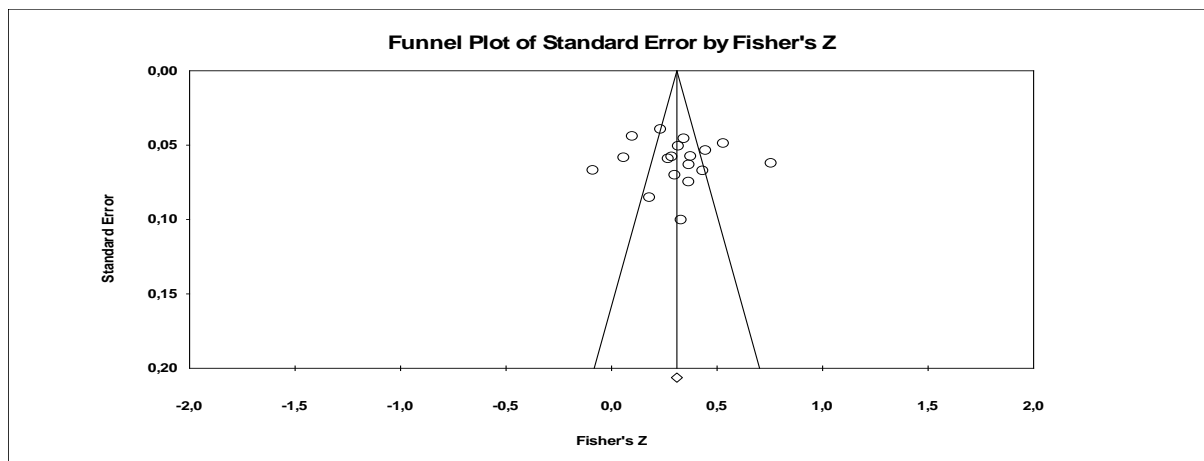**Figure 2.** Funnel plot of PFs sub dataset

Figure 3. Funnel plot of OB sub dataset

As seen in Figure 1. the effect sizes of PTs sub dataset showed a symmetric distribution on the funnel plot. On the other hand, Figure 2 and 3 showed an asymmetric distribution on the funnel plots. The figures of funnel plots can be interpreted as not representing serious publication bias for the effect size of the related studies. In addition to funnel plot, DTTF test, another way of testing and adjusting publication bias, was conducted on datasets of the study and the results were presented in Table 2.

Table 2. Duval and Tweedie trim-fill (DTTF) test for sub datasets.

	Dataset	Excluded Studies	Effect size and 95% interval			Q(top)
			ES	LL	UP	
PTs	Observed		0.37	0.28	0.46	229.82
	Corrected	0	0.37	0.28	0.46	229.82
PFs	Observed		0.53	0.39	0.67	532.08
	Corrected	4	0.62	0.48	0.75	715.3
OFs	Observed		0.31	0.23	0.40	167.53
	Corrected	4	0.25	0.15	0.34	313.25

As seen in Table 2, while there is no publication bias in PTs sub data set, there seem to be bias in PFs and OFs sub datasets as in the funnel plots. By considering both funnel plots and DTTF test, it can be inferred that there is not serious publication bias for the effect size of the related studies.

Results

The mean effect size of personality traits on teacher's CMSs was in medium level (ES=.37 (LL=.28; UL=.46) as presented in Table 2. I^2 value showed that the data set is highly heterogeneous (I^2= 90.46) and the total variance of the dataset is Q= 229.82. Table 3 represents the findings of moderator analysis of the effect of personality traits (PTs) on teacher's classroom management skills.

Table 3. Moderator analysis of the effect of PTs on teacher's classroom management skills

Group	k	ES	LL	UL	Q	df	p
Behavior Dimension							
Emotional traits	15	0.43	0.33	0.53			
Cognitive skills	4	0.20	0.01	0.39			
Personality type	3	0.32	0.09	0.54	4.58	2	0.10
Institution Type							
Pre primary	2	0.47	0.18	0.76			
Primary	7	0.38	0.23	0.53			
Middle School	5	0.36	0.18	0.55			
High School	2	0.21	-0.08	0.50			
Mixed	6	0.40	0.23	0.56	1.70	4	0.79
Branches							
Pre-primary teacher	2	0.47	0.18	0.76			
Primary teacher	7	0.38	0.23	0.53			
Mixed branches	13	0.36	0.24	0.47	0.50	2	0.78
SES							
Level 1	10	0.36	0.23	0.50			
Level 2	5	0.41	0.22	0.59			
Level 3	7	0.36	0.21	0.52	0.16	2	0.92
Publication type							
Article	7	0.38	0.22	0.53			
Master Theses	15	0.37	0.27	0.48	0.01	1	0.95

Table 3 indicates that the mean effect size of PTs showed no difference according to moderator variables. As for the behavior dimension, teachers' emotional traits produced greater effect size than cognitive skills and personality type sub dimensions. Another issue is to be mentioned that the mean effect size of studies also showed no difference according to the publication year (β=0.01; p=.87).

The effect size of PFs on teacher's CMSs was found as moderately positive ES=.0,53 (LL=.39; UL=.67) in Table 2. I^2 value showed that the data set is highly heterogeneous (I^2= 90.63) and the total variance of the dataset is Q= 192.15. The mean effect size of PFs dataset is in medium level both in observed and corrected publication bias. Moderator analysis of the effect of professional factors on teacher's CMSs was presented in Table 4.

Table 4. Moderator analysis of the effect of professional factors on teacher's CMSs

Group	k	ES	LL	UL	Q	df	p
Behavior Dimension							
Communication skill	4	0.61	0.27	0.94			
Teaching attitude	7	0.52	0.27	0.88			
Teaching approaches	4	0.59	0.25	0.92			
Classroom Leadership	4	0.43	0.09	0.76	0.69	3	0.88
Institutional Type							
Pre primary	5	0.49	0.21	0.77			
Primary	6	0.47	0.21	0.72			
Mixed	8	0.61	0.38	0.83	0.74	2	0.69
Branches							
Pre-primary teacher	5	0.49	0.20	0.78			
Primary teacher	6	0.47	0.21	0.73			
Mixed	8	0.61	0.38	0.83	0.74	2	0.69
SES							
Level 1	4	0.34	0.03	0.64			
Level 2	5	0.52	0.25	0.79			
Level 3	10	0.61	0.42	0.80	2.29	2	0.32
Publication type							
Article	8	0.55	0.32	0.78			
Master Theses	10	0.53	0.32	0.73	0.02	1	0.88

Table 4 indicates that the mean effect size of PFs showed no difference according to moderator variables. A noteworthy finding in the result is that the effect of communication skills on CMSs is higher than other dimensions. Another issue is to be mentioned that the mean effect size of studies also showed no difference according to the publication year ($\beta=0.03$; $p=.15$). The last analysis includes the effect of organizational factors on CMSs and was presented in the Table 5.

The effect size of OFs on teacher's CMSs was found as moderately positive ES=.31 (LL=.23; UL=.40) in Table 2. I^2 value showed that the data set is highly heterogeneous ($I^2= 96.61$) and the total variance of the dataset is Q= 167.53. The mean effect size of OFs dataset is in medium level both in observed and corrected publication bias (ES =.25). Moderator analysis of the effect of organizational factors on teacher's CMSs was presented in Table 5.

Table 5. Moderator analysis of the effect of organizational factors on teacher's CMSs

Group	k	ES	LL	UL	Q	df	p
Behavior Dimension							
School culture	5	0.23	0.07	0.40			
Job satisfaction	4	0.20	0.01	0.38			
Motivation	3	0.42	0.21	0.62			
Burnout	5	0.49	0.33	0.64			
Other	2	0.24	-0.02	0.49	10.30	4	0.04
Institutional Type							
Pre primary	5	0.35	0.19	0.51			
Primary	7	0.39	0.26	0.52			
Mixed	5	0.17	0.02	0.33	4.70	2	0.10
Branches							
Pre-primary teacher	5	0.35	0.20	0.50			
Primary teacher	7	0.39	0.26	0.52			
Mixed	6	0.19	0.05	0.33	4.74	2	0.09
SES							
Level 1	8	0.33	0.19	0.46			
Level 2	4	0.24	0.05	0.43			
Level 3	6	0.25	0.09	0.41	0.68	2	0.712
Publication type							
Article	5	0.35	0.17	0.52			
Master Theses	13	0.27	0.17	0.37	0.22	1	0.64

Table 5 showed that the mean effect size of OFs is significant according to organizational factors dimension and the type of institution. In organizational behavior dimension, burnout produced greater effect size than other dimensions. Pre-primary and primary school types have also produced greater effect size than other levels of education. Another issue is to be mentioned that the mean effect size of studies also showed no difference according to the publication year ($\beta=0.02$; $p=.12$).

Discussion

In their study, Wang, Haertel and Walberg (1993) tried to identify and estimate the influence of educational, psychological, and social factors on learning by using an extensive data for analysis represent over 11,000 pieces of research. They identified 28 factors that influence student learning and the most important one was classroom management. Classroom management includes a variety of skills that teachers should have to use in-class learning activities effectively since the most important basis of existence of a school or class is to help pupils organize, focus and follow a productive process through classes. As the extensive classroom management literature shows that effective teachers considered to be competent in classroom management skills, and are more productive than their peers (Sieberer-Nagler, 2016; Hart 2010; Roache & Lewis, 2011; Hill & Tyson, 2009; Iverson, 2003; Emmer & Hickman, 1991), and the ability of a teacher to effectively manage a classroom depends also on the teacher's mode of training and work experience (Lin & Gomell, 1997). From that point of view, the present study focused on teacher's classroom management skills to find out what factors are important or related with them and to what extent are those factors affective on their CMSs. For the purpose of this study, meta-analyses were performed to understand the trend in substantive findings across classroom management skills studies and to find out the effect of personal, professional and organizational factors on teacher's CMSs. Meta analyses consisted of some steps. In the first step, we checked the publication bias with funnel plots and DTTF test and found that the values did not represent serious publication bias for the effect sizes of the related studies. The first step also consisted of analysis of mean effect sizes of sub categories and the results showed that the mean effect sizes of personality traits (PTs) of teachers, professional factors (PFs), and organizational factors (OFs) were in medium level.

The second step included the moderator analysis of the effect of personal traits on teacher's CMSs. The effectiveness of managing a classroom greatly depends on the personality characteristics of the teacher which determines the teacher's level of organization, charisma and unique adjustment to classroom processes. Teachers may have the same professional qualities but they differ in their personality characteristics which makes their approach to classroom management also different (Nkomo & Fagrokha, 2016). Teacher personality profiles have been linked to many characteristics associated with effective schools: classroom management style; types of learning environments and patterns of teacher interactions; student achievement; and teacher attrition (Thornton, Peltier, & Hill, 2005). In this meta-analysis study, personal characteristics of teachers, especially the emotional traits, were found to have moderately positive effect on CMSs. Cognitive abilities and personality types also have weak and significant effect. In terms of sub dimensions of cognitive abilities, problem solving skills have produced a medium level effect, additionally EQ and self-efficacy belief dimensions of emotional traits have a medium level effect on teacher's CMSs. Emotional traits are critical for an effective classroom management, as the teachers, who can manage their own and set the tone of the classroom by developing supportive and encouraging relationships, can create a more open and effective teaching and learning environment with fewer distractions (Jennings & Greenberg, 2009; Brackett & Katulak, 2007). Those findings coincide with many study findings conducted in classroom management literature (Darling-Hammond, 2001; Emmer, 1994; Marzano, Marzano, & Pickering, 2003; Mashburn, Hamre, Downer, & Pianta, 2006; Mujis & Reynolds, 2002; Poulou, 2017; Stronge, Ward, & Grant, 2011; Coban & Atasoy, 2019). In a meta-analysis study of Marzano, Marzano, & Pickering (2003), it was found that teachers who have high-quality relations and communication with their students encounter fewer behavior problems. Self-efficacy perceptions of teachers are also related with successful classroom management skills as Mujis and Reynolds (2002) found in their study and confidence is also a prerequisite to effective classroom management (Cartledge & Johnson, 1996). In another study, Jennings and Greenberg (2009) have focused on teacher's social and emotional competence and proposed a model of the pro-social classroom that highlights the importance of supportive teacher–student relationships, effective classroom management, and successful social and emotional learning program implementation. CMSs of teachers are also related with the improvement of academic success, and affective and cognitive skills of students as Korpershoek et al., (2016) found in their meta-analysis. To sum up the findings, the present conducted meta-analysis showed that personal characteristics, especially emotional ones, are more effective on teacher's CMSs than professional and organizational ones as evidenced in the literature.

The third step involved the moderator analysis of the effect of professional factors on teacher's classroom management skills. Being an effective teacher is mostly related with teacher's personal and professional characteristics as found in a study conducted by Gao & Liu (2012). They found that teacher knowledge, professional attitude, classroom performance, rapport establishing, student motivating, and personality were the skills that effective teachers have in common. In this meta-analysis, professional factors were categorized as collaboration and communication with stakeholders, leadership behaviors in class, teaching–learning approaches used by the teachers and attitude towards teaching activity. All those factors were found to have moderate and significant effect on teacher's CMSs. That means teachers can perform CMSs in an effective way when they have good-quality collaboration and communication with stakeholders such as parents, colleagues and students, show leadership behaviors in class such as motivating, role modeling and inspiring students, use teaching-learning approaches effectively and have positive attitude towards teaching. Effective teachers, whose roles are changing in the last decades (Cakmak, 2011), develop collaboration with the community in which they work, and they also try to find ways to familiarize the culture, climate, and the community that makes up the school (Sieberer-Nagler, 2016). Kane and Harms (2005) also focused on collaborative learning and they dealt with student-teacher interaction and collaboration that give learners a chance to be more active and create a more dynamic classroom interaction resulting in a shared classroom management process with students. There is also evidence that teachers, as leaders in classes, can enhance student learning motivations effectively through improved classroom management practices (Hung & Fan, 2014). Another critical issue is the effectiveness of teaching-learning approaches used by the teachers since an effective teacher also must be aware of his/her students´ interests and styles of learning by using appropriate teaching-learning approaches effectively. By doing that, teachers can develop a positive teaching and learning environment, and this will result in a positive classroom management and engaged students (Bennett & Stanberg, 2006; Jacobs & Renandya, 2017).

The fourth step involved the moderator analysis of the effect of organizational behavior on teacher's classroom management skills. The findings revealed that occupational burnout, low teaching performance and poor organizational communication have negative but significant effect on CMSs of teachers. The effect size of occupational burnout is higher than the two other variables. That finding coincides with Aloe, Amo, & Shanahan (2014) meta-analysis study. They found a significant relationship between classroom management self-efficacy and occupational burnout as the teachers with higher levels of self-efficacy are less likely to experience the feelings of burnout and vice versa. On the other hand, job satisfaction, school climate,

organizational motivation, shared organizational values and rules have moderately positive and significant effect on CMSs. Teachers, who feel satisfied with their job, work in a positive school climate, get motivated by their top managers and share common values and culture with their colleagues, tend to use CMSs more effectively. Study findings on job satisfaction and classroom management show that satisfied teachers use CMSs better and also teachers who use CMSs effectively get satisfied with their jobs (Bilač, & Miljkovic, 2017; Sahito & Vaisanen, 2017). Another dimension is school climate which is multi-dimensional and influences all stakeholders such as students, parents and school personnel (Marshall, 2004). In a school with an improved school climate (Mitchell & Bradshaw, 2010), teachers experience high levels of morale, efficacy and satisfaction, and lower levels of burnout, turnover, and absenteeism (Cohen & Geier, 2010). Those teachers are also willing to improve teaching and learning practices (Simón & Alonso-Tapia, 2016). In their study Mcnelly, Nonnemaker and Blum (2002) examined the association between school connectedness and the school environment to identify ways to increase students' connectedness to school. They found that school connectedness is greater in schools where the classroom management sounds good and teachers are empathetic, consistent, encourage student self-management and allow students to make decisions.

Recommendations

As presented in the findings and discussion sections of this meta-analysis, effective classroom management skills include multi-dimensional factors and they play a key role in reaching the aim of teaching and learning activities. To manage classes effectively, all factors should be taken into consideration in teacher training courses in practice-oriented programs. It will be beneficial for teacher candidates to experience the possible classroom management cases. Teaching profession necessitates various cognitive and emotional personal traits. Hence, choosing and placement policies of teacher candidates should be revised and carefully designed to place the best fit person for teaching in schools. Teachers should be aware of the 21 century skills such as flexibility, creativity or adaptability to enhance their professional competencies. While burnout, low teaching performance and poor organizational communication affect CMSs negatively, teachers, who feel satisfied with their job, work in a positive school climate, get motivated by their top managers and share common values and culture with their colleagues, tend to use CMSs more effectively. It is suggested to inform school administrators and top authorities frequently about that issue to make policies that can lower the effects of those factors. For a positive learning environment, rich interactions of student-student, student-teacher, student-administration or the other stakeholders should be fostered for an effective classroom management. Considering the limitations of quantitative paradigm, the last recommendation for researchers may be to perform qualitative or mixed research methods to understand the classroom management process comprehensively.

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APPENDIX 1

Studies included in meta-analysis.

Adıgüzel, İ. ve İpek, C. (2016). Okul öncesi öğretmenlerinin sınıf yönetimi becerileri ve tükenmişlik düzeyleri. *International Journal of Eurasia Social Sciences*, *7*(23), 247-273

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Reactions Victims Display Against Cyberbullying: A Cross-cultural Comparison

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Abstract

This research aims to examine behavioral reactions that victims display against cyberbullying through a cross-cultural comparison standpoint. The research data have been collected from 161 participants from different countries such as Turkey, Azerbaijan, and Syria; and all of them continue their undergraduate studies in Turkey. Some of the noteworthy findings are as follows: revenge behaviors adopted by victims of cyber-bullying differ at a statistically significant level across the gender variable. On the other hand, reactions such as precautions, dialogue, and avoidance do not vary significantly across genders. Comparisons among nationalities indicate that seeking vengeance from the bully, looking for ways to build dialogue with the bully, and avoiding behaviors employed by victims from different cultures also differ at a statistically significant level. However, one reaction, precautions, does not bear a statistically significant variance value across different nationalities. Based on the findings of the current study, strategies to overcome cyber aggression can be associated with cultural aspects.

Keywords: Cyber victimization; Cyber victims' reactions; Cross-cultural reacting behaviors to cyberbullying; Cyberbullying; Internet usage.

Introduction

Defined as aggressive and intentional actions targeting to harm a specific target group via the use of technology-based communication devices and the Internet (Kowalski et al. 2012, Akbulut et al. 2010; Smith et al. 2008), cyberbullying has recently received quite a substantial attention within technology literature. The fact that cyberbullying behaviors have spiked considerably on a global scale regardless of variables such as social and economic background, age, gender, status, etc. (Agaston et al. 2007; Mishna et al. 2010) in accordance with the vast increase in the frequency of internet use, that bullying ways and methods have multiplied (Peebles 2014; Chisholm 2014), and that victimization leading to serious consequences on part of the victims (Hinduja and Patchin 2013; Cowie 2013) are among the reasons why this issue has received much attention lately (Betts et al. 2017; Mishna et al. 2009; Brewer & Kerslake 2015; Sarı & Camadan 2016; Camodeca & Cossens 2005; Slonje et al. 2013; Akbulut & Eristi 2011; Bauman et al. 2013; Barlett & Coyne 2014).

When the attention within cyberbullying is directed to the victims, research studies have shown that bullying behaviors cause chronic and devastating emotional, psychological, and mental health problems (Cenat et al. 2014; Caputo 2014; Mishna et al. 2010; Olenik-Shemesh et al. 2012; Slonje et al. 2012; Nixon 2014; Patchin & Hinduja 2010; Pronk and Zimmer-Gembeck 2010; Schenk & Fremouw 2012; Schultze-Krumbholz et al. 2010; Cerna et al. 2016). The victims reacting behaviors that victims display against the aggression or the aggressor as a result of their emotional state a very important issue that needs to be discussed (Völlink et al. 2013; Machmutow et al. 2012). The type of reaction can turn the existing situation into a more complicated one, or even a non-proportional reaction can convert the victim into a bully (Eristi & Akbulut 2017).

Relevant literature does not bear a comprehensive analysis of the kinds of tangible responses that victims have displayed so far. Nevertheless, it is possible to mention several classification headlines regarding the reactions exhibited by the victims (Eristi & Akbulut 2017), which include seeking vengeance from the bully (Gollwitzer & Denzler 2009; König et al. 2010), establishing dialogue with the bully, ignoring, forgiving (Safaria et al. 2016), ignoring the attack, and avoiding (Cao & Lin 2015; Na et al. 2015). Additionally, literature reports that victims also try to overcome the problem by employing coping strategies (Tenenbaum et al. 2011; Schenk &

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Fremouw 2012; Machackova et al. 2013) that involve individual, emotional, behavioral, and mental retaliation (Dooley et al. 2012; Smith and Frisén 2012).

There are numerous variables influential over the reactions that victims can adopt against cyberbullying, which include the type and severity of bullying behavior (Beran et al. 2012), personality traits of the victim (Elledge et al. 2013), previous experience with such an aggression (Beran & Li 2005; Espelage et al. 2000), gender (Downey et al. 2004; Paquette & Underwood 1999; Hinduja & Patchin 2011), and age (Sourander et al. 2010). On the other hand, behaviors that people stick to may have various sources such as genetics, biology, physiology, and psychology, and the reactions given by victims should also be considered as behaviors (Davidson et al. 2010; Davidson et al. 2000; Gibson 2002). However, findings distilled from cross-cultural studies point out that the tendency towards cyberbullying and the frequency of cyberbullying behavior differ significantly across cultures (Cowie 2009; Barlett et al. 2014; Scheithauera et al. 2016; Baek & Bullock 2014; Li 2008).

Cyberbullying is a social aggression behavior aiming to hurt others (Archer & Coyne 2005; Hinduja & Patchin 2009). From a social psychology standpoint, one of the definitive factors overreactions given by victims may be the way that individual learns behaviors and builds habits in that culture. Some studies conclude that the cultures that victims live in (Bergeron & Schneider 2005; Barlett et al. 2014) influence their behaviors. Culture, either directly or indirectly, affects each and every behavior of an individual (Barkow et al. 1992; Triandis 1994). The cultural aspect may be an explanatory variable not only for the behaviors displayed by cyberbullies but also for reactions exhibited by victims (Isen 2003). Because defense behaviors are also learned just as aggressive behaviors and culture bear a crucial role over these behaviors, too. As the immediate environment of individual, family, school, and social surroundings guide such behaviors in accordance with the culture they live in (Ojale & Nesdale 2004; Perry et al. 2001).

Some of the still important issues are the depths of psychological, physiological, and social destruction that victims go through because of cyberbullying, the responses that victims produce against cyberbullying, and whether these responses differ across cultural variables or not. This research aims to explain the responsive behaviors that victims from different cultures adopt against cyberbullying from a cross-cultural angle.

Method

Participants

The participants are 161 students from three different countries (68 Turkish-42.2%; 46 Azerbaijani-28.6%; and 47 Syrian-29.2%), and all of them continue their undergraduate studies in Turkey. Participating students were selected through a criterion sampling technique—one of the purposeful sampling methods. The variables set as the criteria to determine the participants were volunteering, coming from a different culture, being a university student, having been cyberbullied, and actively using Internet-based technologies and social networks. As for gender variable, 46 (28.6%) participants are female and 115 (71.4%) participants are male. Concerning the age variable, 95 (59.0%) of all are aged between 18-21 whereas 66 (41.0%) are between 22-24.

Instrumentation

Research data have been collected by using "The extent and predictors of student reactions to cyberbullying scale" developed by Eristi and Akbulut (2017). Validity and reliability examinations of the scale were completed on a total of 778 students (567 undergraduate and 211 high-school students). The item format is determined as a Likert scale. Responses regarding a specific reaction to cyberbullying ranged from 1 (very untrue of me) to 5 (very true of me). Consisting of 34 items, the scale has a four-factor structure including revenge, precaution, dialogue, and avoidance aspects. The scale explained 53.62% of the variance and revealed an overall alpha value of 0.88. Kaiser-Meyer-Olkin Measure of Sampling Adequacy was superb (i.e., 0.907). Bartlett's Test of Sphericity was statistically significant (Approx. Chi-Square: 12558.714; df: 561; $p < 0.001$). Indicators had ideal factor loadings (i.e., > 0.40). All factors revealed small skewness and kurtosis statistics (i.e., between 0.08 through 0.70). All factors were significantly different from each other (Wilks' Lambda = 0.569; $F (3,775) = 195.333$; $p < 0.001$; partial eta squared = 0.431).

Data Collection Procedure and Analysis

The data collection tool was administered online. Instructors shared the survey link with students during their compulsory Information Technology courses, which increased the response rate (>98%). The data collection

lasted three weeks and was completed in May 2017. Conducted to test the normality of the distribution, Shapiro-Wilk test (S-W(159) = .088, p > .05; Skewness = -.39; Kurtosis = .921) pointed that the data set had a normal distribution (Tabachnick & Fidell 2013). Carried out to check the homogeneity of the variance, Leneve test (L(159) = .089; p = .945, p > .05) concluded that parametric tests could be employed for data analysis. Descriptive statistics were followed by relevant parametric tests to see the predictors of different response patterns. In this regard, independent-samples t-test and one-way between-groups ANOVA were used. Post hoc comparisons using the Bonferroni test indicated significant findings, which are reported accordingly below. Effect size indices are also reported for statistically significant results.

Results and Discussion

Revenge and Gender

Results of the independent samples t-test show that mean score of revenge against cyberbullying differs between males (M = 2.42, SD = .89, n = 115) and females (M = 1.92, SD = .63, n = 46) at the .001 level of significance [t (159) = .001, df = 159, p = .001, 95% CI for mean difference -.78 to -.21]. On average, males tend to have more revenge reaction to cyberbullying than females.

Table 1. Independent samples t-test comparing gender and revenge reactions across to cyberbullying

| | Gender | | | | | | 95% CI for Mean Difference | | |
| | Female | | | Male | | | | | |
	M	SD	n	M	SD	n		t	df
Revenge	1.92	.63	46	2.42	.89	115	-.78, -.21	.001*	159

* *p* < .001

Revenge and Nationality

A one-way between groups ANOVA was conducted to compare the revenge reactions among Turkish, Azerbaijani and Syrian students against cyberbullying. The ANOVA shows that there was a significant difference among revenge reactions at the p < .001 level for the three nations [F(2, 158) = 7.53, p = 0.001; partial eta squared = 0.087].

Table 2. One-way between groups ANOVA test comparing nationality and revenge reactions across to cyberbullying

Source	Sum of Squares	df	Mean Square	F
Between Groups	10,237	2	5,124	7,528
Within Groups	107,427	158	,683	
Total	117,664	160		

* *p* < .001

Post hoc comparisons using the Bonferroni test indicated that the mean score for the Turkish students' revenge reactions (M = 2.57, SD = .89) was significantly different than those of Azerbaijani students (M = 2.02, SD = .65) and Syrian students (M = 2.10, SD = 0.86). However, Azerbaijani and Syrian students' revenge reactions did not significantly differ from each other. Post hoc statistics and comparisons are provided in Table 3 and illustrated in Figure 1.

Table 3. Bonferroni multiple comparisons of revenge reactions

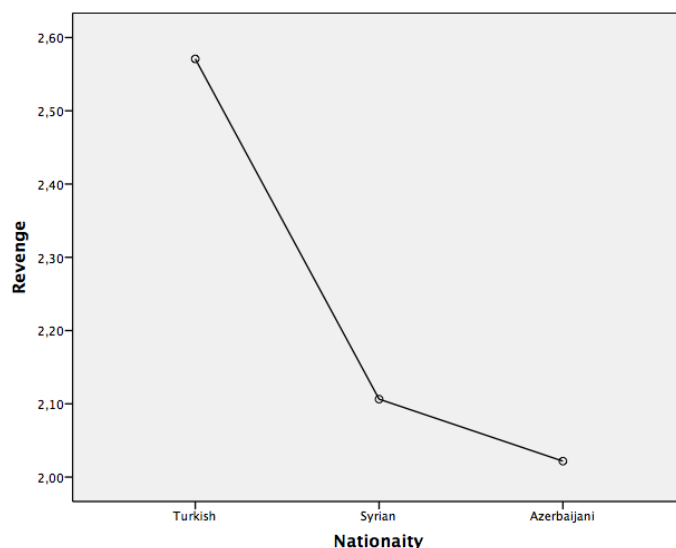| (I) Nationality | (J) Nationality | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
					Lower Bound	Upper Bound
Turkish	Syrian	,46447	,15641	,010*	,0860	,8430
	Azerbaijani	,54912	,15742	,002*	,1682	,9300
Syrian	Turkish	-,46447	,15641	,010*	-,8430	-,0860
	Azerbaijani	,08464	,17102	1,000	-,3292	,4985
Azerbaijani	Turkish	-,54912	,15742	,002*	-,9300	-,1682
	Syrian	-,08464	,17102	1,000	-,4985	,3292

* *p* < 0.05

Figure 1. Revenge reactions according to nationalities

Precaution and Gender

Results of the independent samples t-test show that mean score of precaution against cyberbullying does not differ between males (M = 3.87, SD = .78, n = 115) and females (M = 4.18, SD = .71, n = 46) at the .05 level of significance (t = .165, df = 159, p > .05, 95% CI for mean difference .04 to .57). On average, females tend to have more precaution reactions to cyberbullying than males.

Table 4. Independent samples t-test comparing gender and precaution reactions across to cyberbullying

	Gender						95% CI for Mean Difference		
	Female			Male					
	M	SD	n	M	SD	n		t	df
Precaution	4.18	.71	46	3.87	.78	115	.04, .57	.165*	159

* *p* > .05

Table 5. One-way between groups ANOVA test comparing nationality and precaution reactions across to cyberbullying

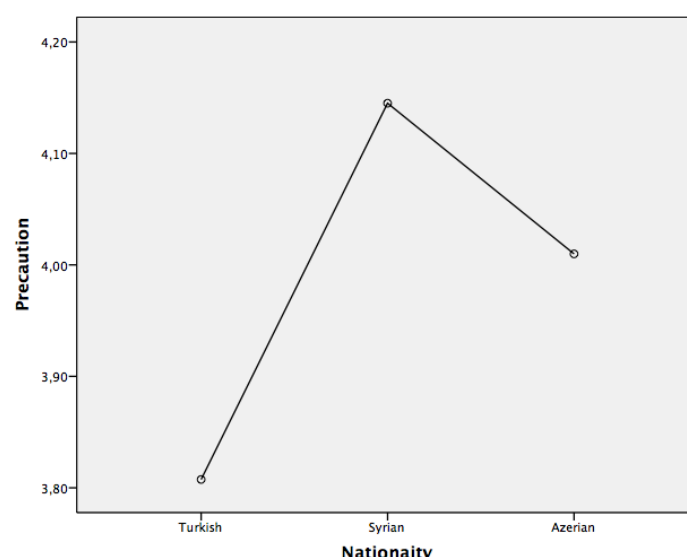| Source	Sum of Squares	df	Mean Square	F
Between Groups	3,304	2	1,654	2,795
Within Groups	93,379	158	,593	
Total	96,682	160		

* *p* > .05

Figure 2. Precaution reactions according to nationalities

Dialogue and gender

Results of the independent samples t-test shows that mean score of dialogue against cyberbullying does not differ between males (M = 2.27, SD = .84, n = 115) and females (M = 2.10, SD = .92, n = 46) at the .05 level of significance (t = .946, df = 159, p > .05, 95% CI for mean difference -.46 to .13). So, on average, males tend to have more dialogue reaction to cyberbullying than females.

Table 6. Independent samples t-test comparing gender and dialogue reactions across to cyberbullying

	Gender						95% CI for Mean Difference		
	Female			Male					
	M	SD	n	M	SD	n		t	df
Dialogue	2.10	.92	46	2.27	.84	115	-.46, .13	. 946*	159

* *p* > .05

Dialogue and nationality

A one-way between groups ANOVA was conducted to compare the dialogue reactions among Turkish, Azerbaijani and Syrian students against cyberbullying. The ANOVA shows that there was a significant difference on dialogue reactions at the p < .000 level for the three nations [F(2, 158)= 16.875, p = 0.000, p < .05, partial eta squared = 0.176].

Table 7. One-way between groups ANOVA test comparing nationality and dialogue reactions across to cyberbullying

Source	Sum of Squares	df	Mean Square	F
Between Groups	21,213	2	10,604	16,875
Within Groups	99,309	158	,623	
Total	120,522	160		

* *p* < .05

Post hoc comparisons using the Bonferroni test indicated that the mean score for the Turkish student dialogue reactions (M = 2.64, SD = .95) was significantly different than the Azerbaijani students' dialogue reactions (M = 1.82, SD = .45) and Syrian students' dialogue reactions (M = 2.01, SD = 0.79). However, Azerbaijani and Syrian students' dialogue reactions did not significantly differ from each other. Post hoc statistics and comparisons are provided in Table 8 and illustrated in Figure 3.

Table 8. Bonferroni multiple comparisons of dialogue reactions

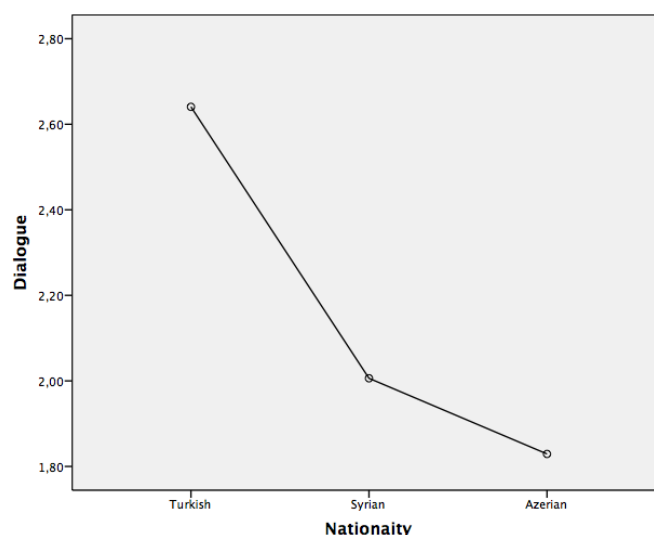| (I) Nationality	(J) Nationality	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Turkish	Syrian	,63468	,15039	,000*	,2708	,9986
	Azerbaijani	,81156	,15135	,000*	,4453	1,1778
Syrian	Turkish	-,63468	,15039	,000*	-,9986	-,2708
	Azerbaijani	,17689	,16443	,851	-,2210	,5748
Azerbaijani	Turkish	-,81156	,15135	,000*	-1,1778	-,4453
	Syrian	-,17689	,16443	,851	-,5748	,2210

* $p < 0.05$ level

Figure 3. Dialogue reactions according to nationalities

Avoidance and gender

Results of the independent samples t-test show that mean score of avoidance against cyberbullying does not differ between males (M = 2.58, SD = .73, n = 115) and females (M = 2.60, SD = .60, n = 46) at the .05 level of significance (t =.064, df = 159, p > .05, 95% CI for mean difference -.22 to .25). On average, females tend to have more avoidance reaction to cyberbullying than males.

Table 9. Independent samples t-test comparing gender and avoidance reactions across to cyberbullying

	Gender						95% CI for Mean Difference		
	Female			Male					
	M	SD	n	M	SD	n		t	df
Avoidance	2.60	.60	46	2.58	.73	115	-.22, .25	.064*	159

* $p > .05$

Avoidance and nationality

A one-way between groups ANOVA was conducted to compare the avoidance reactions among Turkish, Azerbaijani and Syrian students against cyberbullying. The ANOVA shows that there was a significant difference on avoidance reactions at the p < .000 level for the three nations [F(2, 158)= 22.091, p = 0.000, p < .05, partial eta squared = 0.219].

Table 10. One-way ANOVA test comparing nationality and avoidance reactions across to cyberbullying

Source	Sum of Squares	df	Mean Square	F
Between Groups	17,070	2	8,534	22,091
Within Groups	61,044	158	,393	
Total	78,114	160		

* $p < .000$

Post hoc comparisons using the Bonferroni test indicated that the mean score for the Turkish students' avoidance reactions (M = 2.23, SD = .79) was significantly different than those of Azerbaijani students (M = 2.72, SD = .45) and Syrian students (M = 2.99, SD = 0.46). However, Azerbaijani and Syrian students avoidance reactions did not significantly differ from each other. Post hoc statistics and comparisons are provided in Table 11 and illustrated in Figure 4.

Table 11. Bonferroni multiple comparisons of avoidance reactions

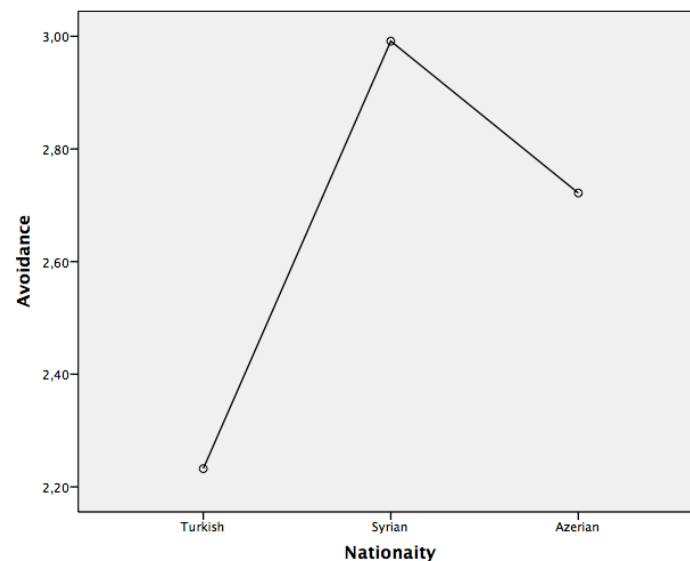| (I) Nationality	(J) Nationality	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Turkish	Syrian	-,75914	,11791	,000*	-1,0444	-,4738
	Azerbaijani	-,48939	,11866	,000*	-,7765	-,2023
Syrian	Turkish	,75914	,11791	,000*	,4738	1,0444
	Azerbaijani	,26975	,12892	,114	-,0422	,5817
Azerbaijani	Turkish	,48939	,11866	,000*	,2023	,7765
	Syrian	-,26975	,12892	,114	-,5817	,0422

*. p < 0.05

Figure 3. Avoidance reactions according to nationalities

Discussion and Conclusion

Gender and reactions to cyberbullying

Aiming to determine reactions displayed by cyber victims from different cultures against cyberbullying, this study concludes that the revenge reaction that victims adopt against cyberbullying varies at a statistically significant level across genders. Male victims employ revenge reaction against cyberbullying more often than female ones. Although the difference is not statistically significant, it can be seen that female victims tend to prefer precaution and avoidance reactions more often than male victims against cyberbullying. On the other hand, male participants' mean score of dialogue reaction is higher than that of female participants. However, the difference between mean scores is not significant. The findings of other studies also conclude that males and females demonstrate different reactions to cyberbullying, and gender is a critical antecedent of behavioral reactions (Wong et al. 2018). Other research results show that males have higher means in terms of revenge (Seals & Young 2003; King et al. 2007; Wright 2017; Eristi & Akbulut 2017) and dialogue whereas females have higher means in terms of precaution and avoidance (Larrañaga et al. 2016; Parris et al. 2011). This finding can be due to females' inclination of avoiding aggression (Juvonen & Graham 2001; Theron et al. 2001). The current finding that male victims are inclined to adopt revenge reaction more often than female victims is also

consistent with the results of other research studies in the literature. Though it is not statistically significant, the difference between genders in terms of preferring dialogue, precaution, and avoidance reactions is also compatible with the conclusions of other studies.

Nationality and reactions to cyberbullying

Cross-national comparisons yielded that the difference among cultures in terms of employing revenge, dialogue, and avoidance reactions is statistically significant. Turkish victims tend to prefer revenge and dialogue reactions much more often that Azerbaijani and Syrian victims. On the contrary, Azerbaijani and Syrian victims adopt avoidance reactions more frequently than Turkish victims. Yet, precaution reaction against cyberbullying does not seem to vary significantly among these three nationalities.

Social culture is a major force guiding individuals to behave in accordance with their culture when confronted with a specific condition. This is much more dominant in communities with higher collectivist values. Individuals feel that they have to put their society in front of themselves (Barlett et al. 2014). Comparative research studies indicate that the frequency of bullying behavior and reactions against bullying differ tremendously across cultures (Akbulut & Eristi 2011; Ferreira et al. 2016; Bergeron & Schneider 2005; Morita 2001; Baek & Bullock 2014). The findings of the current study support those of other studies within the relevant literature.

Honor culture is a commonly employed label to classify societies socio-psychologically and socio-culturally (Ijzerman et al. 2007; Rodriguez Mosquera et al. 2000). Turkey is classified as one of the countries with honor culture (Uskul et al. 2010; Elgin 2016; Öner-Özkan & Gençöz 2016). Honor cultures mostly focus on social images. Suitability to social culture matters more than individual preferences in terms of appraising the value of social dignity (Rodriguez Mosquera et al. 2011). Considering the context in Turkey, honor bears highly central importance for the people living in Turkey (Uskul et al. 2010).

Revenge is a quite common reaction to cyberbullying where the victim is motivated to harm back the aggressor (Sticca 2015). Honor is also critical with respect to revenge. Results of relevant research studies indicate that revenge is a prevalent reaction within honor cultures (Aase 2017; Benavidez et al. 2016; Ijzerman et al. 2007).
This may well explain why the revenge reaction mean score of Turkish participants is significantly higher than those of Azerbaijani and Syrian participants in this research. In honor cultures, each member is responsible for preventing dishonorable actions and their consequences. Therefore, individuals of an honor culture are always ready to defend their individual and social honors (Kim et al. 2010) Social norms of the society dictate that honor must be preserved under any circumstances and at any costs (Leung & Cohen 2011). Moreover, honor and manhood are closely associated in honor cultures, and it is often expected to attack the bully as a reaction to being bullied (Elgin 2016). Feelings like pride, disgrace, and rage are more important in honor cultures than in others (Rodriguez Mosquera et al. 2000). When an individual detects any kind of aggression against his honor, it produces rage, and the individual feels obliged to retaliate the bully out of hostility (Cohen et al. 1996).

Again, collectivist culture can be taken as the reason why dialogue reaction is adopted significantly more often by Turkish participants as opposed to Azerbaijani and Syrian students. Interestingly, the relevant body of studies points out that collectivistic countries are more open to communication and more forgiving than are individualistic countries (Hook et al. 2009; Lennon 2013). Cyber dialogue is a way of indirect communication between individuals without seeing each other. When it is cyberbullying, the bully and the victim do not even know each other. Research results show that indirect communication is quite common in collectivist societies where honor cultures are also represented (Hammer 2005; Peterson 2004).

Furthermore, the results of relevant research studies conclude that reacting, risk-taking, self-defense, and retaliation are far less frequent in societies that support avoiding uncertainties (Bergeron & Schneider 2005). Revenge, by all means, is a risk-taking behavior since it will give the other party the right to retaliate (Yoshimura 2007; Gollwitzer et al. 2011). So, current political, economic, and social facts, present conditions of the countries, and international variables may have been influential over why Azerbaijani and Syrian participants have significantly higher mean scores of avoidance reaction than Turkish students. On the other hand, cultural homogeneity and ethnic diversity can also be considered as other factors leading to such a result. In addition, wanting to employ revenge reaction against a cyberbullying incidence is quite different than actually adopting a revenge reaction. One has to know appropriate means and channels to attack back on the aggressor for revenge in a cyber setting, which requires some knowledge about technology use. Considering the economic and social conditions of their countries, the frequency, and prevalence of internet and technology use, and how competent they are in terms internet and technology use, it is possible to state that this variable may

also have been effective as to why Azerbaijani and Syrian participants prefer avoidance reaction more than Turkish students. While Turkey has a high rank in terms of internet use among the countries of the world, it is way more limited in Syria and Azerbaijan due to economic and political reasons (Transparency International 2008; Reporters without Borders 2017).

Recommendations

Relevant literature is rather limited with respect to studies linking the reactions that victims exhibit against cyberbullying with reaction types and across different variables. Similar studies and cross-national comparisons can be conducted to further investigate the role of culture by choosing countries from different continents, with different cultures, and from different social strata. Likewise, belief systems, ethnic layout, socio-economic status, and educational background can also be set as other relevant variables for further research.

Based on the findings of the current study, strategies to overcome cyber aggression can be associated with the cultural aspects. Once families and schools notice the relation between culture and behavior, they can help their children develop correct and appropriate coping strategies in accordance with their own cultural behavior codes. With respect to the reactions that victims exhibit against cyber aggression, the results of this research can also be utilized to prevent cyber aggression and to explain the behaviors of the aggressors. There may be a correlation between the continuity, severity, and density of the attack and victims' reactions. On the other hand, the aggressor may be planning the following attacks based on the victim's reactions.

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

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The Educational Beliefs of Pre-Service Teachers as an Important Predictor of Teacher Identity

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Abstract

This study aims to determine the relationship between the educational beliefs and teacher identity of pre-service teachers from all grade levels of four different departments at Afyon Kocatepe University. Besides, to what extent the educational beliefs predict their teacher identity is also examined. The research is conducted using the correlational survey model. The sample of the study consists of 324 pre-service teachers who are studying in all grades at Afyon Kocatepe University. In the data collection process, "Education Belief Scale" developed by Yılmaz, Altınkurt and Çokluk (2011) and "Early Teacher Identity Measure" developed by Friesen and Besley (2013) and adapted into Turkish by Arpacı and Bardakçı (2015) is used. In line with the findings, the pre-service teachers' dominant educational philosophies are identified as existentialism, progressivism, re-constructionism, perennialism, and essentialism, respectively. There is a significant and positive relationship between educational beliefs and teacher identities, except for essentialist belief. The results suggest that the pre-service teachers' educational beliefs and teacher identities differ significantly in terms of gender, grade and department variables. Additionally, while the prediction model is significant, progressivist educational belief is found out to be the most important dimension in the model that explains the teacher identity. These four educational beliefs, together, account for 23% of the change in teacher identity level of pre-service teachers.

Key words: Teacher identity, Educational beliefs, Pre-Service teachers.

Introduction

Nowadays, theories in which the student is taken to the center in educational environments are put to work. The principles of these theories include giving importance to the interests, needs, attitudes and educational beliefs of the individual who will gain knowledge, skills or competence through teaching and learning processes. Especially, because of the view that beliefs are a major factor affecting the quality and outcomes of the educational process, more researchers focus on belief and concepts related to this concept in the educational literature.

One of the most powerful factors in the formation and emergence of behavior is the belief of an individual (Bandura, 2006). Belief can be defined as the processes and qualifications aimed at perceiving, interpreting, evaluating, and determining the attitudes and tendencies of an individual about the situation, phenomena, and concepts that the individual encounters during his/her life (Deryakulu, 2008). Researchers define the concept of belief as a structure composed of emotion, behavior, and tendency components towards objects and events and place beliefs on the basis of attitude formation (Hogg & Vaughan, 2005). Attitude is the preparatory tendencies that involve the regular and coherent roles of mental, affective, and behavioral expressions of an individual towards an object (Kağıtçıbaşı, 2010).

Beliefs that are adopted by teachers in education include elements such as methods and techniques used in conducting educational activities, theoretical foundations of approaches in the learning environment, competent communication with students, and systematic classroom management (Çapa & Çil, 2000). When all these components come together, teachers' educational philosophies come into being. Determining their beliefs about education, which is one of the important drivers of quality in education, is thought to be an important initiative in order to increase the quality of education and training activities.

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With the developments in the information age, the opportunities in the process of access to information have increased and diversified. This situation has brought about important improvements in education, such as the more effective and active participation of students in the teaching process and in structuring information. The teacher who is an important factor in ensuring the adaptation of individuals has important tasks at this stage (Karahan, 2003). According to Varış (1994), the success of an education system depends on the beliefs and attitudes of teachers in terms of cognitive, affective, and dynamic aspects and the coordination between them. According to Carter and Norwood (1997) and McDiarmid (1990), knowing the educational beliefs of teachers and pre-service teachers is the first step towards improving the quality of education and understanding the values and beliefs of those involved in carrying out these processes (cited by Bulut, 2009).

Education, which has been described in different ways by philosophers and educators in the historical process, has always had a philosophical perspective. In the field of education, as in other intellectual fields, philosophy evaluates the underlying concepts of educational systems, brings educational approaches together in a rational way and disciplines assumptions, beliefs, and decisions according to meaning and consistency criteria (Cevizci, 2012). It is possible to explain all dimensions of education and the functions and actions between these dimensions with the philosophy of education. Educational philosophies, which are at the center of curriculum development and evaluation activities, are a phenomenon that affects all the dimensions making up the curriculum within the ideological framework. Educational philosophies classified according to various criteria can be categorized roughly as traditional/contemporary or rigid/flexible (Kılıç, 2000).

Perennialism which is predominantly based on realistic and idealistic philosophy perceives the universe in a spiritual form because it attaches importance to metaphysics and absolute values, and it reveals the position of man in the universe spiritually. According to the perennialist, the only truth is mind, and all material things that must be real can be reduced to mind or soul (Brauner & Burns, 1982). The process of knowing takes place in the form of remembering or defining the pre-existing, formed, and perpetual concepts in idealism. Therefore, school is a social institution established to develop the potential of the human mind (Gutek, 2001).

Essentialism, on the other hand, is based on realist and idealist philosophies as an educational philosophy claiming that man as a social being has a standard essence and is not endowed with any innate knowledge. In terms of essentialist philosophy, the aims of education are to develop the mind and will of the human being, to ensure that the rules of the mind are used correctly and effectively, and to educate the individual according to ideal and universal realities. According to the essentialism assuming that information is obtained through induction, the most important mission of the school is to teach the individual intellectual disciplines and thus to ensure the continuity of cultural heritage (Cevizci, 2012).

According to progressivism which is based on John Dewey pragmatism, education is a social work done to make an individual competent, strong, and productive in society. The pragmatists who claim that education is not a result but a process of life itself argue that the content should be structured in integrity with human nature and environment and with purposeful experiences selected considering the interests of individuals. In a democratic environment, a cumulative process must prevail in the learning environment intended to be realized through actions and experiences (Kaplan, 2008). Additionally, real problems should be reflected in the educational environment, and all kinds of courses representing the whole life should be included in the program.

In re-constructionism, which is also called social restructuring, active participation of the individual's to learning environment is a result of the knowledge-based learning based on the mental activities. Restructuring which is based on reinterpreting, structuring and transferring existing knowledge claims that the learned knowledge should be a tool for solving problems in actual life (Doğanay & Sarı, 2003).

According to existentialism, which is a modern philosophical movement, the aim of education is to accustom man to the existing world. In existentialism where absolute or aristocratic subjectivism is involved in the teaching and learning process, the individual prepares himself/herself for both success and failure during the education process. Moreover, according to existentialism, students demonstrate the ability freely to express their learning processes in line with their abilities and interests (Kop, 2004). Although a continuous program is not mentioned in the existentialist philosophy, the curriculum design in the concept of existentialism is put forward flexibly according to the needs of the educational unit level and the characteristics of the students.

In the light of these explanations, it can be said that one of the important factors affecting the teachers' direct and indirect fulfillment of their roles and responsibilities in the context of educational activities is their philosophical orientation or preference. Nevertheless, the attitude towards teaching profession is an important factor in conducting it. The educational philosophies of teachers consist of ontological, epistemological and

axiological components. Ontologically, teachers have an orientation towards the relationship between teacher and student in educational settings and the roles of each other. Besides, teachers have thoughts about which type of knowledge has priority and what values should be conveyed in the education process and all these elements come together to form the beliefs of teachers.

The positive attitudes and beliefs of the individuals who will perform the teaching profession are the prerequisites for fulfilling the requirements of the profession in the most effective way. The positive attitude towards the profession also supports the commitment level of the teacher identity (Baydar & Bulut, 2002). It is possible for the teacher, who is one of the most important stakeholders in the continuation of education and training practices, to provide learning and teaching environment that supports the content targeted for the curriculum by being aware of the needs of his/her professional identity (Semerci & Semerci, 2004).

The teacher who is the representative of the concept of learning, which is considered as an interaction process, draws attention with the definition of 'authority figure' in line with the related literature. The teacher who is obliged to carry out his/her professional activity and to provide the necessary conditions for the success of the teaching process has many roles such as family member, counselor, boss, learning guide, professional expertise, judge, guide or therapist (Bozdoğan, Aydın & Yıldırım, 2007). When we are to place teachers' attitudes about their roles on classroom activities in a student-centered way, we end up seeing duties such as encouraging the students and planning in-class or out-of-class activities (Oral, 2004). Considering all these rankings, the teacher's actual identity, professional attitude and identity to adopt roles parallel to the relevant norms and values can only be associated with the philosophy of education which is considered only when carrying out educational activities (Bulut & Doğar, 2006).

Importance of Research

In line with the literature reviewed, it is possible to state that the philosophy of education adopted by teachers and pre-service teachers occupies a great place in the formation of teacher identity. Teachers' commitment to their profession and social awareness of their profession are necessary and important to reach positive perception about their roles and believe that they have to constantly improve themselves (Temizkan, 2008). This research is important and necessary for the purpose of explaining the predictable dimensions of the relationship between pre-service teachers' educational beliefs and teacher identities. Furthermore, it is assumed that it can be a model in the related field with the benefit and usefulness it will bring to the literature. This model will attempt to clearly determine the impact of each of the educational philosophies on the belief in education and thus reveal the internal relationship between these two structures. With this model, it will be possible to determine which educational philosophy should be focused on in order to make educational belief positive and effective.

Problem Statement

Thus, the study investigated whether there was a significant relationship between the educational beliefs and teacher identity of pre-service teachers. Furthermore, it examined the education beliefs and level of the teacher identity of pre-service teachers, and also, the effects of some demographic variables on these two concepts.

Method

Research Design

The research was conducted using the correlational survey model. The correlational survey model is important to reveal relationships between variables and to determine the levels of these relationships (Karasar, 2016, p. 114). Moreover, the correlational survey provides the necessary clues for conducting more complicated investigations on a relationship (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz & Demirel, 2013, p. 185). This study tried to determine the relationship between the educational beliefs and teacher identity of pre-service teachers from all grade levels of four different departments at Afyon Kocatepe University. Besides, to what extent the educational beliefs predicted their teacher identity was also examined. The sub-problem of the study was whether these two concepts differed significantly in terms of gender, grade level, and department variables.

Participants
The sample of the study consisted of 324 pre-service teachers who were identified through convenience sampling in all grades at Afyon Kocatepe University. The distribution of the determined sample according to some variables is presented in Table 1.

Table 1. Distribution of the Sample

Variable	Value	f	%
Gender	Female	274	84,6
	Male	50	15,4
Grade level	1st Grade	75	23,1
	2nd Grade	50	15,4
	3rd Grade	62	19,1
	4th Grade	137	42,3
Department	Pre-School Education	153	47,2
	Primary School Education	22	6,8
	Social Sciences Education	79	24,4
	Mathematics Education	70	21,6
TOTAL		**324**	**100**

Data Collection Tool

In the data collection process, "Education Belief Scale" developed by Yılmaz, Altınkurt and Çokluk (2011) was used to determine which educational philosophy pre-service teachers predominantly conceptualized. The scale was a five-point Likert-type scale with a total of 40 items. The scale consisted of five factors: "Progressivism", "Existentialist Education", "Re-constructionism", "Perennialism", and "Essentialism". For the reliability of the scale, Cronbach Alpha internal consistency coefficients calculated for Educational Belief Scale's dimensions varied between .70 and .91 (Yılmaz, Altınkurt & Çokluk, 2011). In the present study, the Cronbach Alpha coefficients of the dimensions varied between .71 and .88. These values were considered to be highly reliable for the scale to be used in the present research (Tavşancıl, 2006, p. 29).

Besides, "Early Teacher Identity Measure" developed by Friesen and Besley (2013) and adapted into Turkish by Arpacı and Bardakçı (2015) was used to obtain the teacher identity level of the pre-service teachers. The scale was a five-point Likert-type scale which had a single factor with a total of 17 items. As a result of factor analysis, it was seen that the scale items explained 48.94 % of the variance. For the reliability of the scale, Cronbach Alpha internal consistency coefficients based on item analysis was .93 for the whole scale (Arpacı & Bardakçı, 2015). In the present study, the Cronbach alpha coefficient for the whole scale was calculated as .91.

Data Analysis

The data obtained from the scales were analyzed using SPSS statistical program. In order to determine the educational beliefs and level of teacher identity of the pre-service teachers, mean of their responseswascalculated. Then the normality test was performed to determine whether the data related to educational beliefs and teacher identity of pre-service teachers demonstrateda normal distribution. First, Kolmogorov Smirnov test was used becuse the size of the sample is greater than 35 (McKillup, 2012). The values obtained from Kolmogorov-Smirnov test were significant for the sample. However, Field (2009) stated that to calculate z-scores related to skewness and kurtosis coefficients gives more reliable results for determining the normality because Kolmogorov-Smirnov test show a conservative structure. According to z-scores the data showed a normal distrbution related to educational beliefs and teacher identity of pre-service teachers. So, a group of statistical analyses were conducted as follows:
- Independent samples t-test to determine whether the pre-service teachers' educational beliefs and teacher identity showed a significant difference in terms ofgender;
- One way ANOVA test to determine whether the pre-service teachers' educational beliefs and teacher identity showed a significant difference in terms of grade and department variables;
- Pearson correlation test was conducted to determine whether there was a significant correlation between the pre-service teachers' educational beliefs and teacher identity;
- Multicollinear regression test to determine whether the pre-service teachers' educational beliefs significantly predicted their teacher identities.

Findings

In the first problem of the study, means of the responses to the whole scale and dimensions were calculated in order to determine the level of the pre-service teachers' educational beliefs and teacher identity. The mean scores are shown in Table 2.

Table 2. Descriptive Statistics on Educational Beliefs and Teacher Identity

Dimension	f	Minimum	Maximum	$\bar{x}$	S.D.
Progressivism	324	16,00	65,00	56,54	7,25
Existentialist Education	324	7,00	35,00	31,54	4,09
Re-constructionism	324	8,00	35,00	28,29	4,14
Perennialism	324	9,00	40,00	31,88	4,85
Essentialism	324	5,00	25,00	13,22	4,02
Teacher Identity	324	22,00	85,00	69,48	10,65

When the findings in Table 2 were examined, it can be stated that the pre-service teachers showed the highest participation in the belief in existential education. Moreover, the pre-service teachers showed participation in the belief in progressivism at "totally agree" level and in re-constructionism and perennialism at "agree" level. However, the pre-service teachers showed a participation in the belief in essentialism at "undecided" level. It can be stated that the items of the scale related to essentialism often emphasize the teacher's authority and punishment. In spite of this, while the perennialist educational philosophy is a conservative philosophy, too, the items of the scale related to perennialism emphasize values education and the development of reasoning. So, the teacher candidates had a higher level in perennialist education belief than essentialist one.

When the dominant education belief of the pre-service teachers was examined, most of pre-service teachers showed participation in the belief in existential education (n=225). This is followed by the belief in progressivism (n=83), re-constructionism (n=38), perennialism (n=34), and essentialism (n=19) respectively. Also, the pre-service teachers' teacher identity levels were found to be at "agree" level. So, it can be said that the pre-service teachers had a high teacher identity level.

In the second problem of study, it was investigated whether educational beliefs and teacher identity differed significantly in terms of gender, grade, and department variables. First, the results related to gender are shown in Table 3.

Table 3. Differentiation of Educational Beliefs and Teacher Identity according to Gender

Dimension	Gender	N	Mean	Std. Deviation	t	p
Progressivism	Female	274	57,07	6,85	3,120	.00*
	Male	50	53,64	8,65		
Existentialist Education	Female	274	31,93	3,80	4,084	.00*
	Male	50	29,42	4,94		
Re-constructionism	Female	274	28,60	3,90	3,121	.00*
	Male	50	26,64	4,97		
Perennialism	Female	274	32,19	4,54	2,188	.03**
	Male	50	30,22	6,07		
Essentialism	Female	274	12,90	3,91	-3,374	.00*
	Male	50	14,96	4,22		
Teacher Identity	Female	274	70,20	10,51	2,880	.00*
	Male	50	65,54	10,64		

*p<.05   ** Equal variances not assumed

When the findings in Table 3 are examined, it can be said that the pre-service teachers' all educational beliefs and teacher identity level differ significantly according to gender. It can be stated that the means determined in all dimensions are higher in favor of the female pre-service teachers except essentialist belief. In other words, the male pre-service teachers tend to participate in essentialist belief more than the female pre-service teachers. Also, the female pre-service teachers' teacher identity levels are higher than the male pre-service teachers.

In the third problem of the study, it was investigated whether educational beliefs and teacher identity differed significantly according to grade. The results of one way ANOVA test are shown in Table 4.

Table 4. Differentiation of Educational Beliefs and Teacher Identity according to Grade

Dimension	Grade	N	Mean	F	df	p	Source of Difference
Progressivism	1st Grade	75	53,97	6,956	3	.00*	4-1; 4-2; 4-3
	2nd Grade	50	56,02				
	3rd Grade	62	55,85				
	4th Grade	137	58,45				
Existentialist Education	1st Grade	75	30,26	4,491	3	.00*	4-1
	2nd Grade	50	31,24				
	3rd Grade	62	31,53				
	4th Grade	137	32,36				
Re-constructionism	1st Grade	75	26,52	6,826	3	.00*	2-1; 3-1; 4-1
	2nd Grade	50	29,42				
	3rd Grade	62	28,50				
	4th Grade	137	28,77				
Perennialism	1st Grade	75	30,24	4,581	3	.03*	4-1; 2-1
	2nd Grade	50	32,36				
	3rd Grade	62	31,66				
	4th Grade	137	32,72				
Essentialism	1st Grade	75	13,66	2,867	3	.00*	1-4; 2-4; 3-4
	2nd Grade	50	13,86				
	3rd Grade	62	13,83				
	4th Grade	137	12,46				
Teacher Identity	1st Grade	75	66,82	10,531	3	.00*	4-1; 4-2; 4-3
	2nd Grade	50	68,86				
	3rd Grade	62	65,40				
	4th Grade	137	73,02				

*p<.05

When the data in Table 4 are examined, it can be said that the pre-service teachers' all educational beliefs and teacher identity level differ significantly according to grade. It can be stated that the means determined in all dimensions and teacher identity are higher in favor of higher grade pre-service teachers except essentialist belief. In other words, as the grade increases, the teacher identity and educational beliefs of the pre-service teachers except essentialism are increasing.

After that, it was investigated whether educational beliefs and teacher identity differed significantly according to department. The results of one way ANOVA test are shown in Table 5.

Table 5. Differentiation of Educational Beliefs and Teacher Identity according to Department

Dimension	Department	N	Mean	F	df	p	Source of Difference
Progressivism	Pre-School	153	58,58	8,805	3	.00*	1-3; 1-4
	Primary School	22	56,00				
	Social Sciences	79	54,00				
	Mathematics	70	55,12				
Existentialist Education	Pre-School	153	32,39	4,289	3	.00*	1-3; 1-4
	Primary School	22	31,04				
	Social Sciences	79	30,68				
	Mathematics	70	30,82				
Re-constructionism	Pre-School	153	28,78	2,419	3	.06	
	Primary School	22	26,86				
	Social Sciences	79	27,59				
	Mathematics	70	28,48				
Perennialism	Pre-School	153	32,65	2,595	3	.05	
	Primary School	22	30,81				
	Social Sciences	79	31,05				
	Mathematics	70	31,50				
Essentialism	Pre-School	153	12,36	4,554	3	.00*	3-1; 4-1

	Primary School	22	13,95
	Social Sciences	79	13,89
	Mathematics	70	14,10

Teacher Identity	Pre-School	153	72,98	12,181	3	.00*	1-2; 1-3; 1-4
	Primary School	22	66,63				
	Social Sciences	79	65,20				
	Mathematics	70	67,57				

*p<.05

When the data in Table 5 are examined, it can be said that the pre-service teachers' progressivism, existentialism, and essentialism educational beliefs and teacher identity level differ significantly according to department. It can be stated that the means determined in teachers' progressivism and existentialism educational beliefs and teacher identity are higher in favor of pre-school pre-service teachers than social sciences and mathematics pre-service teachers. Also, pre-school pre-service teachers' teacher identity levels are higher than primary school pre-service teachers. In essentialist belief, social sciences and primary school pre-service teachers' beliefs are higher than pre-school pre-service teachers.

After that, it was investigated whether there was a significant correlation between educational beliefs with teacher identity. The results of Pearson correlation test are shown in Table 6.

Table 6. Correlation between Educational Beliefs and Teacher Identity

	1	**2**	**3**	**4**	**5**	**6**
1. Teacher Identity	1,00					
2. Progressivism	,481**	1,00				
3. Existentialism	,481**	,864**	1,00			
4. Re-constructionism	,298**	,684**	,639**	1,00		
5. Perennialism	,378**	,649**	,600**	,725**	1,00	
6. Essentialism	-,181**	-,126**	-,171*	,154**	,185**	1,00

**Correlation is significant at the 0.01 level (2-tailed).

When the results in Table 6 are examined, it can be said that there is a significant and positive correlation between the pre-service teachers' educational beliefs and teacher identity except essentialism. The highest correlation is found between teacher identity and existentialist belief (r=.481; p<.01), and the lowest one is found between teacher identity and essentialist belief (r=-.181; p<.01). All correlation coefficients are found to be significant.

After that, multiple regression analysis was conducted to determine whether teachers' educational beliefs significantly predicted their teacher identities. The results of the analysis of variance related to regression analysis are shown in Table 7.

Table 7. The Results of The Analysis of Variance related to the Prediction of Teacher Identity

Model	Sum of Squares	df	Mean Square	F	p
Regression	7891,517	4	1972,879	23,971	,00*
Residual	25925,371	315	82,303		

When the Table 7 is examined, it can be stated that the model established for the prediction of the teacher identity of the pre-service teachers by the progressivism, existentialism, re-constructionism, and perennialism educational beliefs is meaningful ($F_{(4,315)}=23,971$; p<.01). After that, the findings of multicollinear regression analysis between the education beliefs and teacher identity concept were given in Table 8.

Table 8. The Results of Regression Analysis on the Prediction of Teacher Identity by Educational Beliefs

Predictive Variables	B	Std. Error	β	t	p	Zero-order	Partial
(Constant)	21,368	5,282		4,045	,00*		
Progressivism	,436	,151	,253	2,891	,00*	0,441	0,161
Existentialism	,757	,254	,245	2,986	,00*	0,438	0,166
Re-constructionism	-,449	,195	-,164	-2,300	,02*	0,227	-0,129
Perennialism	,382	,159	,165	2,399	,01*	0,315	0,134

R=,483; R^2=, 233;
$F_{(4,315)}$=23,971; p<.01

According to the analysis, while the model is significant as a whole [$F(4,315)=23,971$; $p<.01$], progressivism educational belief ($\beta = .253$) is found out to be the most important dimension in the model that explained the teacher identity. These four variables, together, account for 23% of the change in teacher identity level of the pre-service teachers. The relative order of importance of the dimensions in the regression model is seen as existentialism ($\beta = .245$) and perennialism ($\beta = .165$) educational beliefs. These education beliefs were found out to be satisfactorily significant. Besides, re-constructionism ($\beta = .164$) educational belief was found to be significant but non-linear for the prediction of teacher identity. This suggests that teacher identity level of pre-service teachers is strongly explained by education beliefs such as progressivism, existentialism, and, perennialism.

According to the findings, regression equation of pre-service teachers' teacher identity was as follows;
Teacher Identity=21,368+0,253*Progressivism+0,245*Existentialism+0,165*Perennialism-0,164*Re-constructionism

Discussion and Conclusion

A portion of the research conducted in Turkey about educational beliefs were aimed at determining teachers' and pre-service teachers' educational philosophies and beliefs (Altınkurt, Oğuz & Yılmaz, 2012; Çetin, İlhan & Arslan, 2012; Doğanay, 2011; Doğanay & Sarı, 2003; Ekiz, 2005; 2007; Geçici & Yapıcı, 2008), and some of them were related to associating educational beliefs with various variables. For example, there are studies in the literature about teachers' and pre-service teachers' educational philosophy and learning styles/strategies (Duman, 2008); epistemological beliefs and attitudes towards teaching profession (Önen, 2011); teacher-student relations (Yılmaz & Tosun, 2013); teaching strategies (Çoban, 2002); and, effective teacher behaviors and beliefs about classroom management (Okut, 2011). This study investigated the relation between pre-service teachers' educational beliefs and teacher identity and the extent to which teacher identities of pre-service teachers were predicted by their educational beliefs. The study also tried to determine whether these two variablesdiffered significantly in terms of gender, grade, and department variables.

In line with the findings, the pre-service teachers' dominant educational philosophies were determined as existentialism, progressivism, re-constructionism, perennialism, and essentialism, respectively. From this point of view, it can be stated that pre-service teachers prefer existentialism and progressivism in which the individual's and society's interests, needs, and expectations are taken into consideration rather than the philosophies of perennialism and essentialism that emphasize the traditional understanding in education. On the other hand, in the study, it was determined that the pre-service teachers were more involved in the philosophy of perennialism which emphasized culture transfer and values education rather than the essentialist philosophy emphasizing teacher's authority, memorization and repetition processes, and strict discipline. In Yılmaz and Tosun's (2013) research in which teachers adopted the most existential, progressive, perennialist, re-constructive and essentialist educational philosophies respectively coincides with the findings of the research.

When other studies conducted on different sample groups are examined, it is seen that the educational philosophies adopted by the teachers differ slightly, but in general, the findings of the current research show similarities. In the other studies (Altınkurt et. al., 2012; Ilgaz, Bülbül & Çuhadar, 2013; Koçak, Ulusoy & Önen, 2012; Oğuz, Altınkurt, Yılmaz & Hatipoğlu, 2014; Şahin, Tunca & Ulubey, 2014; Uğurlu & Çalmaşur, 2017), although it was determined that the education beliefs of the pre-service teachers were based on the existentialist education philosophy, the philosophy of existentialism was adopted at least in the research of Tekin and Üstün (2008) and at medium-level in the research of Doğanay and Sarı (2003). When the findings of the studies were examined, it was very important that the pre-service teachers adopted the principles of existentialism that reflects the current understanding of education. The philosophy of existentialism serves as an important roadmap for education systems aiming at transformation and equal opportunity in education.

According to the findings of this research, teacher identity of the pre-service teachers was found to be high. Teachers' perceptions of teacher identity as the basis of their beliefs as well as their educational beliefs directly affect instructional activities. In this respect, it can be stated that pre-service teachers feel themselves ready for the teaching profession and are motivated to do this profession. However, prospective teachers also think that they possess many of the cognitive and affective skills required by the teaching profession. Considering the literature, it has been determined that pre-service teachers from different grades and departments have positive/high teacher identity and proficiency belief (Akbulut, 2006; Aydın & Boz, 2010; Büyükduman, 2006; Diken, 2006; Erişen & Çeliköz, 2003; Gencer & Çakıroğlu, 2006; Gerçek, Yılmaz, Köseoğlu & Soran, 2006; Küçükyılmaz & Duban, 2006; Savran & Çakıroğlu, 2001; Uygur, 2010; Ülper & Bağcı, 2012; Yıldırım, 2011).

According to the findings, there was a significantand positive relationship between education beliefs and teacher identities, except for essentialist belief. At this point, it can be stated that teacher identity of pre-service teachers are generally fed by philosophies that center the student and emphasize the individual differences of the student. In this context, it is possible that the intense and continuous emphasis on constructivism philosophy in education faculties creates significant differences in students' understanding. According to this philosophy, in order to prevent the student from having a passive identity in the learning environment, the teacher should offer choices in which the student can gain competence and can effectively participate in the learning process in line with the evolving tendencies of the teacher's identity rather than an authoritarian and disciplinary understanding.

It is seen that these principles, which are considered important in the context of contemporary philosophies, are considered by pre-service teachers as an important element of their teaching identity. Similar to the findings of this study, Altınkurt, Oğuz, and Yılmaz (2012) found that the dimensions in which teachers participated most were the dimensions of existentialism, progressivism, perennialism, re-constructionism, and essentialism, respectively.

As a result of the findings obtained from the research, the pre-service teachers 'educational beliefs and teacher identities differed significantly according to gender (p <.05). It is seen that these differences are in favor of female pre-service teachers except for the essentialism philosophy. In line with these findings, it is noteworthy that female teacher candidates adopt contemporary educational philosophies more and male teacher candidates adopt stricter educational philosophies. Similar to the findings of the study, in the study conducted by Beytekin and Kadı (2015), a significant relationship was found between teacher education beliefs and value scores according to gender variable. Additionally, female teacher trainees' scores of progressivism, existentialism, and re-constructionism were higher than male teacher candidates' scores; but, for essentialist and perennialist beliefs, the situation is exactly the opposite. In the study, it was stated that the effect of factors may be in question such as home and previous school settings on the view of female pre-service teachers as a justification for the relevant situation.

In another study, Yılmaz and Tosun (2013) found that although the views of the participants related to progressivism and re-constructionism did not change according to gender, essentialist, perennialist, and existentialist beliefs changed according to gender. While male teachers had higher participation in perennialist and essentialist beliefs, female teachers had higher participation in existentialist education philosophy. In other words, male teachers adopt permanent and fundamentalist education philosophies that emphasize the characteristics of hard work, control, teacher centeredness, and preparation for life at a higher rate than female teachers. Accordingly, it can be said that male teachers advocate a more rigid educational process than female teachers. The fact those female teachers' opinions about existential education are more positive than male teachers can be considered as a parallel finding.

In the related literature, there is information that male teachers are more controlling, authoritarian, coercive, and aggressive than female teachers (Savran & Çakıroğlu, 2004; Zaremba & Fluck, 1995). In the study conducted by Oğuz, Altınkurt, Yılmaz, and Hatipoğlu (2014), a significant difference was found in educational beliefs of the teachers according to gender in favor of female teachers in the existentialist belief dimension. However, in spite of the findings obtained from this study, Çetin, İlhan, and Arslan (2012) found that gender was not an effective variable on the educational philosophies adopted by pre-service teachers.

According to the findings of this study, the pre-service teachers' educational beliefs and teacher identities differed significantly according to the grade variable. Apart from essentialism, it was found that the difference was in favor of the upper classes. In parallel with the findings of the study, Ekiz (2005) compared the educational beliefs of the first and fourth year students and determined that the first year students adopted the philosophies of perennialism and essentialism more, and the fourth year students adopted the philosophies of progressivism and re-constructivism more.

Çetin, İlhan and Arslan (2012) found that grade variable had a statistically significant effect on the level of pre-service teachers' adoption of traditional and contemporary educational philosophies. Unlike this study, Çakmak, Bulut, and Taşkıran (2016) did not find any significant difference in existentialism, progressivism, re-constructionism, and essentialism education beliefs according to grade variable. A significant difference was found between first with second grade, third grade and fourth grade in favor of first grade for the belief in perennialist education. In a study conducted by Biçer, Er, and Özel (2013), it was determined that while social studies pre-service teachers adopted the philosophy of perennialist education in the first years of the university, their beliefs in this philosophy of education decreased when they came to the last years.

Based on this finding, the fact that pre-service teachers are faced with the education environment in which essentialist and perennialist philosophy are kept at the forefront at secondary level can be considered as the reason behind the adoption of traditional educational philosophies in the first years of undergraduate education. However, the courses such as Classroom Management, Teaching Principles and Methods, Special Teaching Methods, Instructional Technologies and Material Design, Teaching Practice which are included in the third and fourth grade curriculum of undergraduate education and emphasize the necessity of contemporary philosophy help them adopt contemporary educational philosophies.

As a result of the findings obtained from this research, the pre-service teachers' educational beliefs and teacher identities differed significantly according to the department variable except for the re-constructivist and perennialist beliefs. In terms of educational beliefs, social studies and mathematics pre-service teachers adopted essentialist belief higher than pre-school pre-service teachers. In the progressivism and existentialism belief, pre-school pre-service teachers were higher than social studies and mathematics pre-service teachers.

Furthermore, it was determined that pre-school pre-service teachers had a higher level of teacher identity than social studies, mathematics, and classroom pre-service teachers. There are several reasons why pre-school and classroom teachers have a higher level of skill compared to other branches.

It can be thought that primary and especially pre-school curricula are convenient to use contemporary philosophies in terms of being flexible and convenient to use alternative methods and thus providing opportunities for teachers to make different decisions and implement them. At the same time, the interdisciplinary structure of the curriculums related to these branches provides the connection of subjects and achievements with many courses and thus the principles of contemporary philosophies are effective in the teaching process. In the context of assessment and evaluation, pre-school and classroom teachers can use more flexible and alternative methods (portfolio, and, so on.) than other branches. On the other hand, there is a more rigorous curriculum and measurement and evaluation process especially in mathematics and social studies. At the same time, all these factors develop pre-school pre-service teachers' identities, too. Köstekçi (2016) also have stated that classroom teachers who have the opportunity to interact with all students from the beginning of their education life more easily adopt an approach appropriate to the contemporary beliefs and offer more effective teaching.

According to the analysis, while the model was significant as a whole [$F(4,315)=23,971$; $p<.01$], progressivism educational belief ($\beta = .254$) was found out to be the most important dimension in the model that explained the teacher identity. These four variables, together, accounted for 23% of the change in teacher identity level of pre-service teachers. The relative order of importance of the dimensions in the regression model was seen as existentialism ($\beta = .245$) and perennialism ($\beta = .159$) educational beliefs. This suggests that teacher identity level of pre-service teachers is strongly explained by education beliefs such as progressivism, existentialism, perennialism, and re-constructivism. Especially, the fact that many elements of today's education system stem from the philosophy of progressivism and the emphasis on this philosophy in theoretical and practical processes in the faculties of education can be considered as the rationale of the model for predicting.

At this point, it can be suggested to create processes and learning environments that pre-service teachers can make reflections about their educational beliefs. thus, they will be aware of their educational beliefs and realize how these beliefs affect their decisions and actions in the educational process. Besides, the determination of pre-service teachers' and teachers' educational beliefs and their relationship with elements such as teacher identity, teacher effectiveness and teacher roles should be revealed with a deeper perspective.

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Problems and Solutions concerning English Language Preparatory Curriculum at Higher Education in View of ELT Instructors

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Abstract

This study aims to explore the problems and the solutions concerning the English language preparatory curricula implemented at Eskişehir Osmangazi University, School of Foreign Languages according to ELT instructors. Participants of the study are 50 ELT instructors teaching English language in three different proficiency levels (A1, A2, B1). Case study, a qualitative research method, was adopted in the study and self-report method (written reports) was used to gather the data. Deductive, or top-down approach, was used to analyze the qualitative data. The results of the study reveal that the problems and the solutions as to the curriculum are analyzed under four themes that are objectives, teaching materials, assessment and evaluation and general structure. Concerning the objectives, lack of clarity and control of the objectives are among the problems. The problems as to course book, additional materials and writing pack are analyzed under the second category that is teaching materials while the problems regarding midterms, quizzes, project works, writing portfolios, and class performance grade are analyzed under the third category that is assessment and evaluation. Last, three sub-categories as to general structure are as follows: physical problems, problems as to number and level of students in the classrooms and administrative problems. Solutions to the problems are suggested.

Key words: EFL, Preparatory curriculum, Higher education, Problems and solutions, ELT instructors

Introduction

The English language is increasingly significant as a means of communication and interaction among different cultures. English language is spoken by 400 million people all around the world and it is the language most widely used as a lingua franca language of communication among non-native speakers (Aydın & Zengin, 2008; Gömleksiz & Özkaya, 2012). As the main language of communication in the world, using English could have positive effects at an individual level (Demirel, 1993). In particular, people have a desire to learn English language due to such reasons as keeping up with technological developments, having a better career, recognizing different cultures, and developing a different perspective (Akpur, 2017).

Although English language has a vital status as lingua franca all over the world, it has been observed that Turkish learners cannot master English language (Sarıçoban & Öz, 2012; Suna & Durmuşçelebi, 2013). According to the report titled "Turkey National Needs Assessment of State School English Language Teaching", despite having received an estimated 1000+ hours of classroom instruction, Turkish students fail to learn English before the end of high school. As a result, the students' language performance in higher education impacts negatively upon the learning quality in the higher education institutions where the medium of instruction is English (TEPAV, 2015). Besides, according to results of English proficiency index, Turkey ranks very low among the first hundred countries included into the index (EPI, 2019).

The increasing importance of learning a foreign language has been reflected in Turkey's educational policies since the Tanzimat period and teaching English as a foreign language has been continuing since the reform era in Turkey (Haznedar, 2010; Suna & Durmuşçelebi, 2013). Similarly, it is obvious that individuals or students spend a great time and effort from primary school to the senior year of high school in order to learn English as a foreign language. However, it seems English language cannot be mastered despite the effort spent at both political and individual levels (Bağçeci, 2004; Mehdiyev et al., 2016; Suna & Durmuşçelebi, 2013).

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These problems prove that there is a need for studies exploring the factors yielding to the failure in learning English language. In particular, preparatory schools offer intense language instruction to the students to study an English-medium department at universities. Knowledge of foreign languages gains importance especially at higher education level in terms of pursuing academic studies and having a successful professional life (Şen Ersoy & Kürüm Yapıcıoğlu, 2015). For this reason, most students who could not have an effective foreign language education until the university need to gain foreign language skills within an academic year after they start university (Akpur, 2017; Erdem, 2018).

However, both instructors and students encounter various problems that negatively affect language learning quality in the preparatory schools. English lessons have been carried out at all grades and levels beginning from the second grade primary school since the academic year 2013-2014 (Küçüktepe, Küçüktepe & Baykin, 2014), However, the abolition of the compulsory preparatory classes at pre-university education levels and the failure to assess the foreign language knowledge and skills of the students in the university entrance exam lead to inefficient courses at pre-university education levels –i.e. primary, secondary, and high school. (Akpur, 2017; TEPAV, 2015). Thus, it is necessary to reveal the problems and propose solutions in order to improve the quality of learning and teaching in the preparatory schools.

Universities in Turkey have been offering foreign language education including at least one academic year. Foreign language education is carried out within preparatory schools or foreign languages departments of universities. The main purpose of the education offered in preparatory program is "to teach the student the basic rules of the foreign language, to improve the vocabulary knowledge of foreign language, to understand what he reads and hears in the foreign language, to enable him to express himself orally and in writing" according to the relevant regulation of the Higher Education Institutions (YÖK, 2016). Depending on the purpose, specified in the regulation, students are expected to acquire four basic skills of language as well as improve their grammar and vocabulary knowledge of a foreign language in the preparatory classes of higher education institutions.

In these programs, the expected level of language at the end of one academic year is B1 according to the Common European Framework of Reference for Languages. At the end of the language proficiency exam held at the beginning of each academic year, between 5% and 10% of the students can start undergraduate programs without taking the preparatory education. (TEPAV, 2015). Students who fail the exam enroll at the preparatory program and they can pass it if they succeed in the foreign language proficiency exam held at the end of the first or second academic year. However, students who fail two consecutive years in prep-class lose their right to study in an English-medium department and are forced to change their university or department (YÖK, 2016).

In order to achieve the aim of the education given in preparatory classes at higher education level, it is necessary to prepare and implement the curriculum effectively and systematically. For this reason, it is necessary to identify the deficiencies of the curriculum and to propose solutions to improve the curriculum. Studies investigating the effectiveness of the preparatory curriculum at higher education level exist in literature (Akpur, 2017; Balcı, Durak Üğüten & Çolak, 2018; Cloves & Aytunga, 2019; Coştu, 2011; Gökdemir, 2005; Karatas & Fer, 2009; Öztürk, 2017; Scott & Akdemir, 2018; Seven & Sonmez, 2004; Shirtless & Özkaya, 2012; Şen Ersoy & Kürüm Yapıcıoğlu, 2015). The results of these studies show that there are problems in English education offered in preparatory classes at higher education level.

According to the results of the researches, preparatory curriculum is insufficient to meet the expectations of students to develop sufficiently in speaking skills (Akpur, 2017; Durak Üğüten & Çolak, 2018; Karatas & Fer; 2009; Seven & Sonmez, 2004; Scott and Akdemir; 2018; Shirtless & Özkaya, 2012; Şen Ersoy & Kürüm Yapıcıoğlu, 2015). In addition, other problems are as follows: mismatch between the objectives of the preparatory curriculum and student expectations (Karataş & Fer, 2009; Sağlam & Akdemir, 2018; Seven & Sönmez, 2004; Şen Ersoy & Kürüm Yapıcıoğlu, 2015), the lack of English for specific purposes in the preparatory curriculum (Durak Üğüten and Çolak, 2018; Karataş & Fer, 2009; Şen Ersoy & Kürüm Yapıcıoğlu, 2015), grammar-focused instruction (Durak Üğüten & Çolak, 2018; Gökdemir, 2005), negative views on the course materials (Fer, 2009; Karanfil & Aytunga, 2018) negative views on the assessment and evaluation processes (Akpur, 2017; Durak Üğüten & Çolak, 2018; Öztürk, 2017; Şen Ersoy & Kürüm Yapıcıoğlu, 2015).

The aim of this case study is to explore the views of ELT instructors working in the English Preparatory Department of School of Foreign Languages at Eskişehir Osmangazi University on objectives, teaching materials, assessment and evaluation and general structure of the preparatory system. Furthermore, the study is significant in terms of its contribution to the solution of similar problems experienced in higher education preparatory programs in Turkey.

Method

In this section, design of the research, participants and context, and data collection and analysis are explained.

Design of the research

In the study, case study method, one of the qualitative research designs, was used to identify the problems related to the English Preparatory Curriculum in higher education and to propose solutions to the problems. Case study aims to deeply analyze and interpret a complex phenomenon such as an important problem, event or program. The situation should be limited to a unit such as a group of students, class, school, case or event (Mertens, 2014). In this study, problems as to the English preparatory curriculum were taken as a case and the limited situation was analyzed using the reporting technique (written reports of ELT instructors).

Participants and context

The study group of the study consisted of 50 ELT instructors who are conducting the curriculum at A1, A2 and B1 proficiency levels of Eskişehir Osmangazi University, Foreign Languages Department in 2018-2019 academic year. Teaching experience of the participants change from 3 to 23 years. At the time of the research, the lessons were carried out by 11 instructors in B1 level, 18 instructors in A2 level and 21 instructors in A1 level. Since the entire research population was included in the study, sampling was not found necessary.

Eskişehir Osmangazi University Department of Foreign Languages (ESOGUFLD) undertakes the duty of conducting English preparatory education for the students of the Faculties of Engineering, Architecture, and Economics and Administrative Sciences who do not have the required English proficiency level. The Curriculum Development Office is responsible for identifying the problematic aspects of the curriculum and conducting necessary arrangements in cooperation with the administration, coordinators and, other offices (assessment and evaluation office).

In ESOGUFLD, English language curriculum was designed by members of curriculum development office in cooperation with the administration in 2016-2017 academic year after an extensive needs analysis. The objectives of the curriculum are in live with the Common European Framework of Reference for Languages and curriculum development office has been conducting studies to develop the curriculum. The present research reports one of the studies done within the scope of curriculum development studies in ESOGUFLD.

Regarding the content of the curriculum, the selected course book with the approval of all the instructors is followed throughout the academic year. In addition, supplementary packs (writing pack, reading pack, etc.) prepared by the coordinator responsible for each proficiency level are followed in all classes when required. Finally, every week, additional activities prepared by the coordinators are e-mailed to the instructors. Regarding assessment and evaluation, students' progress during an academic year is evaluated as a whole. For this purpose, periodic exams (co-quizzes), free quizzes, midterms, final exam, writing quizzes and project presentations are applied at every level and students are expected to get at least 70 points in order to be successful (ESOGUFLD Foreign Language Instruction and Examination Directive, 2018).

Data collection

The research was conducted in 2018 and 2019 academic year by using a qualitative data collection technique, self-report technique. In order to conduct the research, firstly, a form was prepared to enable the instructors to report the problems related to the curriculum and suggest solutions to these problems. The form was first prepared in cooperation with two ELT instructors in 2017 and 2018 academic year. The first instructor had a PhD degree in curriculum and the other one in English Language Teaching. The experts were in duty in the curriculum development office with the researcher in 2017 and 2018 academic year. The first draft of the form was used throughout the entire academic year (2017-2018) to get the opinions of instructors about the curriculum. After, at the beginning of the 2018 and 2019 academic year, the form was revised by the researcher in cooperation with the expert on curriculum and instruction and it was used to gather data. The instructors were not asked any questions in the form so as not to guide them and they were expected to express the problems they encountered in a written way under the headings "objectives, teaching materials, assessment and evaluation, and general structure" of the preparatory curriculum. Besides, they were expected to suggest solutions to the problems they expressed in the form. Last, the instructors were not obliged to express problems related to all the categories in the form at the same time. They could choose any categories in the form to report

the problems and suggest solutions. The form was sent to the instructors by e-mail and they replied the e-mail after they filled in the form. The data collection procedure was demonstrated in the Table-1.

Table 1. The schedule of data collection

Fall term	Spring term
22nd October	**18th February**
Instructor-1	Instructor-1
Instructor-2	Instructor-2
Instructor-3	Instructor-3
Instructor-4	Instructor-4
Instructor-5	**25th February**
29th October	Instructor-5
Instructor-6	Instructor-6
Instructor-7	Instructor-7
Instructor-8	Instructor-8
Instructor-9	**4th March**
Instructor-10	Instructor-9
5th November	Instructor-10
Instructor-11	Instructor-11
Instructor-12	Instructor-12
Instructor-13	**11th March**
Instructor-14	Instructor-13
Instructor-15	Instructor-14
19th November	Instructor-15
Instructor-16	Instructor-16
Instructor-17	**18th March**
Instructor-18	Instructor-17
Instructor-19	Instructor-18
Instructor-20	Instructor-19
26nd November	Instructor-20
Instructor-21	**25th March**
Instructor-22	Instructor-21
Instructor-23	Instructor-22
Instructor-24	Instructor-23
Instructor-25	Instructor-24
3rd December	**8th April**
Instructor-26	Instructor-25
Instructor-27	Instructor-26
Instructor-28	Instructor-27
Instructor-29	Instructor-28
Instructor-30	**15th April**
10th December	Instructor-29
Instructor-31	Instructor-30
Instructor-32	Instructor-31
Instructor-33	Instructor-32
Instructor-34	**29th April**
Instructor-35	Instructor-33
17th December	Instructor-34
Instructor-36	Instructor-35
Instructor-37	Instructor-36
Instructor-38	**6th May**
Instructor-39	Instructor-37
Instructor-40	Instructor-38
24nd December	Instructor-39
Instructor-41	Instructor-40
Instructor-42	**13th May**
Instructor-43	Instructor-41
Instructor-44	Instructor-42
Instructor-45	Instructor-43
31st December	Instructor-44

Instructor-46	Instructor-45
Instructor-47	**20 th May**
Instructor-48	Instructor-46
Instructor-49	Instructor-47
Instructor-50	Instructor-48
	Instructor-49
	Instructor-50

As seen in the table, the numbers were used to code the participants. For instance, the first instructor that participated in the study was coded "Instructor-1" and the second one as "Instructor-2" and so on. As seen in the table, the first five instructors were expected to fill in the form on 22nd October, 2018 or the following days of the week and the next five instructors were emailed the form next week (on 29th October, 2018) to fill it in. After, all the instructors were sent the form in regular turns in fall term, the same procedure was repeated in spring term beginning from the first week. Thus, the data of the research were collected over an academic year.

Findings

As a result of the analysis, data gathered to investigate the participants' views on the issues and processes (objectives, teaching materials, assessment and evaluation and general structure) in the preparatory curriculum are presented accordingly. Table-2 shows the problems and suggested solutions related to the objectives of the English preparatory curriculum.

Table 2. Problems and solutions related to the objectives of the English preparatory curriculum

Problem	**Suggested solution**
Lack of -clear objectives	Determining the objectives of the preparatory curriculum and determining an assessment system for evaluating language use
-focus on the objectives towards language production	Adoption of a production-oriented assessment system
Intense content -leads to lack of evaluation of the objectives achieved - prevents the objectives from achieving	Instead of following books and additional materials, a framed curriculum can be prepared to allow teachers to design their own activities.

As it can be seen in the Table-2, the first of the problems as to the objectives of the curriculum is the lack of clarity. In addition, the lack of focus on the objectives of the curriculum towards language production is the second problem. In order to solve both problems, it is suggested that an evaluation system to assess language use should be adopted.

Instructor-1: *"In fact, everyone is confused about objectives of the curriculum, most of us do not know what a student can do after completing the prep class. Everything we teach must be beneficial for the student in real life, for example, if the student cannot use relative clauses properly in real life, this is not real learning. ... The extent to which the student is able to use what is taught must be tested in the exam, our objectives should be tested in exams"*

In addition, the intense content causes some problems that are concern of not falling behind the syllabus and the lack of evaluation of the students' learning. İntense content especially in A1 level disallows the instructors to give sufficient time to students to digest the newly taught subject. Also, they are unable to check how far the students achieve the objectives. In order to solve these problems, the instructors suggest that a framed curriculum should be followed instead of a book-driven curriculum.

Instructor 15: *" After the quizzes we call progress test, we don't see which structures have been learnt. Even if we focus on them, the curriculum does not allow to revise the problematic topics. A large percentage of the final exam must be production-oriented "*

Instructor 9: *" The aim is to finish the book or to make students communicate in the four basic skills? We should be able to prepare our own material; a material office can be established. We can prepare a framed curriculum and go accordingly."*

The problems related to the teaching materials of the English preparatory curriculum are examined under the titles of course book, additional materials, and writing pack. Table 3 shows the problems and suggested solutions related to the teaching materials of the curriculum.

Table 3. Problems and solutions related to the teaching materials of the English preparatory curriculum

Course Book	
Problem	**Suggested Solution**
Vocabulary *insufficient* *-vocabularies in number* *-activity types*	
Reading *Short reading texts at low levels* *Insufficient* *-reading texts in number* *-question types* *Question styles incompatible with the ones asked in the exam*	Selecting a new course book
Grammar *Language structures that are not included in the book although the level is appropriate.* *Insufficient number of production-oriented activities compared to mechanical activities high in number* *insufficient number of grammar activities*	Supporting the available course book with additional materials.
Repetitive themes and topics	
Repetitive activity types	
High level grammar structures	
Videos that do not catch interest of the students	
Inconsistencies in the answer key	
The i-tool that is not user friendly	
Sudden rise in language level of B1 book	

Additional Materials	
Problem	**Suggested Solution**
Additional materials that do not support / eliminate the deficiencies of the book	Communication-oriented activities as well as mechanical activities are needed Listening activities are needed The materials should include questions similar to the types of questions asked in the exam individual activities in addition to pair / group activities are needed At least one compelling and high level reading text every week Activities compatible with rising level of book B1
Quality problems resulting from the creation of additional materials by a single person	Assignment of additional materials to all ELT instructors. Creating an additional materials pool independent of the book Creating an online platform and sharing materials among the instructors Establishment of material office
Problems as to photocopying the materials	Additional materials can be combined to make a pack so that students can buy it at the beginning of the year.
Low level of materials for B1 level students	
Absence of activity keys	
Loss of clarity when reproduced and projected on the board	

Writing pack	
Problem	**Suggested Solution**
Inconsistency between the example paragraphs in course book and writing pack	Skipping the relevant section in the course book and focusing on the pack only
Example paragraphs incompatible with the ones asked in the exam	
Lack of objectives to improve academic writing skills	additional materials to overcome the deficiencies

As shown in the Table-3, there are problems related to the course book and writing pack, and the additional materials. Initially, the instructors find the course book insufficient particularly in terms of vocabulary, reading and grammar. Apart from this, repetitive topics and activities in the book are among the problems mentioned. Last, other problems are as follows: the students are asked the structures that were not taught before, the videos are not interesting, the i-tool of the book is not user-friendly, and the level of the book suddenly rises when the B1 book is switched. The instructors propose two different solutions to all the problems related to the book: changing the course book and overcoming the problematic aspects of the book with additional materials.

Instructor 17: *"number of readings is insufficient in the book,… Extra reading should spread to the year and 1 reading extra can be given per week"*
Instructor 43: *"The grammar part of the book is very weak and should be supported with materials. The activities are very mechanical. Therefore, it is good to have communicative additionals."*
Instructor 31: *"Some exercises of the book include structures that are not taught to the students. I'm skipping those parts.*
Instructor 21: *"Software is not user-friendly. We should change the course book"*

Besides, there are problems with the additional materials prepared by the coordinators and sent to the instructors each week. The most common problems concerning the additional materials are that they don't overcome the deficiencies of the book, that the creation of the materials by a single person (coordinator) reduces their efficiency and quality, and that the additional materials cannot be photocopied and used. Solutions suggested to the first problem are as follows: communication-oriented activities should be sent in addition to mechanical activities, listening activities should be sent, questions similar to the types of questions asked in the exam should be sent, pair/group activities as well individual activities should be sent each week, more challenging and high-level reading passages should be sent, and activities appropriate to the language level of the B1 book should be sent.

Instructor 21: *"Extras include group activities most of the time, individual activities should be sent, as well"*
Instructor 17: *"…Course book is weak in terms of reading. Reading material is better every week, not every two weeks. Some more compelling texts can be given for the reading material."*
Instructor 25: *"In Int (B1), listening activities' language level suddenly become so high that students don't understand. easy-to-difficult listening activities can be added to additionals. "*

Suggested solutions to the problem of the creation of additional materials by a single person (the coordinator) are as follows: Creation of additional materials by all instructors by the distribution of tasks, creation of an additional materials pool independent of the book, creation of an online platform where the instructors can share materials, establishment of material office.

Instructor 32: *"It is not wise for a single coordinator to create extras. A task sharing can be made and editing task can be left to the coordinators. "*
Instructor 42: *"Additionals are used to compensate for the deficiencies of the book. A pool can be created for additionals. But this task would not be broken down to a few teachers, but it should be a platform where purpose-oriented activities are shared, not book oriented ones. Instead of preparing material from the beginning, we can share materials we find from other sources. The whole school should have access to this resource platform"*

Regarding the photocopy problem in the department, instructors suggested a pack be prepared at the beginning of the semester.
Instructor 48: *"Materials need to be multiplied in photocopy room, we cannot use them this way. A copy of the materials may be left to the room for us."*

Finally, the low level materials for B1 students, absence of activity keys, loss of clarity when reproduced and reflected on the board due to poor quality of additional materials are the other problems mentioned.

Additionally, there exist some problems with the writing pack. Firstly, the paragraph examples given in the book and the writing pack do not match each other. In order to solve this problem, the instructors suggest that the relevant section of the course book should be skipped and only the writing pack should be used.

Instructor 3: "*Pack was good, but the students did not understand the examples. They were confused by the opinion paragraph style in the book. They had difficulty in understanding the opinion paragraph questions. Opinion paragraph should be done just like in the pack and that section in the book should be skipped*"

Apart from this, lack of aims to develop academic writing skills is another problem encountered. Regarding the problem, the instructors state that students are unable to acquire basic information about consistency, coherence, writing the main idea sentence and to use the conjunctions correctly and appropriately. The proposed solution is to overcome deficiencies with additional materials

Instructor 22: "*It was decided not to achieve the objectives of academic writing, but students are incapable of using even the simplest linking words, organization, coherence, mechanics. They do not consciously use a few transitions and patterns they have learned. Therefore, even if the student is not given a pack, worksheets supporting writing tasks can be prepared and given.*"

Final problem is that that the example paragraphs given in the writing pack do not reflect paragraph characteristics expected in the exam.
Instructor 50: "*The pack given for opinion paragraph is all of our troubled teachings, and in the example paragraphs, there are no features that we will consider later when evaluating.*"

The problems related to the assessment and evaluation processes of the curriculum are examined under the titles of quizzes, midterms, writing exams, project presentations and classroom performance evaluation. The problems and suggested solutions related to the assessment and evaluation processes of the curriculum are shown in Table-4.

Table 4. Problems and solutions related to the assessment and evaluation of the English preparatory curriculum

Quizzes	
Problem	**Suggested Solution**
Incompatibilities between different quizzes, midterms and final exams	All exams should be reviewed by coordinators, and assessment and evaluation office and necessary corrections and arrangements should be made.
Quiz duration that disallows the evaluation of all subjects taught	Quizzes can be divided and conducted once a week instead of once every 2 weeks Quizzes can be divided by taking skills (listening, reading, writing, speaking, grammar and vocabulary) into consideration and 2 skill exams can be conducted (such as vocabulary + reading + listening and writing + grammar + speaking) Different skills can be assessed in different exams without including all skills in each quiz
Inadequate number of quizzes assessing non-book activities	Increasing the number of free quizzes by reducing the number of general quizzes
Questions assessing grammar and vocabulary rather than language use	Increasing the number of questions that assess language use
Question types insufficient in number	

Midterms	
Problem	**Suggested Solution**
Mentally exhausting exams that cover multiple choice, listening and writing in a single session	The writing exam should be conducted as a separate session followed by multiple-choice and listening session and a half-hour break should be given between the two sessions .
Exam's language level below / above students	
Lack of diversity in question styles that are prepared by a single coordinator	A diverse type of questions to be included into the exams
Inadequate number of vocabulary questions	
Inadequate number of questions that assess language use	
Unfair assessment in speaking exams that last too long.	Duration of speaking exams can be shortened by giving a single activity instead of 2 activities.

Writing Portfolio	
Problem	**Suggested Solution**
Lack of real assessment because of the considerable overlap between tasks in the course book and quizzes	Making changes in the tasks before asking them in the exam
Lack of opportunity to give feedback to the writings of the students before the quizzes	Adopting a process-oriented approach instead of product-oriented writing and using different correction techniques (such as codes)
Lack of opportunity to evaluate students' actual performance because of the model paragraph reflected on the board	
Problems related to the rubric used in the evaluation	Recommendations for adding new criteria to the rubric

Project work/presentations	
Problem	**Suggested Solution**
Students' low language level and lack of affective readiness for project presentations in the first weeks	Carrying out the first projects at a later date (for A1 and A2 levels)
Excess number of project presentations in a semester	Making an additional quiz instead of the first semester project presentation and project presentations that start in the second semester
Poor performance of students	Monitoring the progress of students' performance throughout the year by identifying a single format instead of project assignments in different formats
Inefficiency of project presentations in view of students	
Students unwilling to do project assignments that require video footage	
Lack of student interest in project topics	
Decrease in the number of students presenting project in the second semester	Getting ideas from students for different projects
Students that are in different classes and present the same presentation	Presenting options to students instead of forcing them to do projects in a single format
The compelling tasks that do not support the learning English	Projects that students will both have fun and be exposed to English

Class Performance Evaluation	
Problem	**Suggested Solution**
Inability to evaluate students' participation in class	Determination of an assessment and evaluation system for evaluating students' classroom performance

The first problem with quizzes is the mismatch between different quizzes, midterms and final exams. It is stated that in order to solve this problem all exams should be reviewed by coordinators and assessment and evaluation office and corrections and arrangements should be made when necessary. The second problem is the subjects that cannot be included in the exam due to the short duration of the second term quizzes (45 min). Suggested solutions to this problem are as follows: Quizzes can be divided and conducted once a week instead of once every 2 weeks, or quizzes can be divided according to skills and different skills can be assessed in different exams. Third problem with quizzes is the inadequate number of quizzes that assess non-book activities, and as a solution, it is proposed to increase the number of free quizzes by reducing the number of general quizzes. Last, questions that assess grammar and vocabulary rather than use of language in the quizzes and the lack of diversity in question types asked in the quizzes are among the problems mentioned.

Instructor 18: *"Quizzes and midterm are sometimes not parallel. Because different instructors prepare them. Coordinators need to be able to provide feedback to the quiz and make corrections"*
Instructor 25*: "We don't have to ask reading and listening questions in every quiz. Or reading and listening can be given as a separate quiz. Grammar and vocab separately."*
Instructor 2: *"We don't have a chance to evaluate non-book activities. More free quiz, less general quiz is better"*
Instructor 8: *"Fitting quizzes into 2 pages and 45 minutes restricts us. Students study only in quiz week. Quizzes can be done every week.*
Instructor 7: *"They are too much mechanics and recognition oriented. We should prepare more production-oriented quizzes. Less quizzes that assess communication skills and that are short should be prepared. "*

The most frequently highlighted problem about midterm exams is that multiple-choice midterm exams, listening and writing exams conducted in a single session is exhausting for students. For this reason, it is suggested that the writing exam be held as a separate session after the multiple choice plus listening session and a half-hour break between the two sessions should be given. The second problem is that the preparation of the midterm exams by a single coordinator prevents the diversity of question styles so it is necessary to include different types of questions in the exam. The third problem related to the midterm exams is that the instructors are mentally tired and the assessment is not fair in the later part of the speaking exam as it takes too long. The solution suggested is to shorten the duration of the exam by giving students a single activity instead of 2 activities in speaking exams. Apart from these, the level of exams below / above the students, insufficient number of vocabulary questions and insufficient number of questions that assess the use of language are among the problems concerning the midterm exams.

Instructor 38: *"There should be a short break for writing sections in midterms. It is very exhausting for students to answer all questions that assess all skills in a single session"*
Instructor 40: *"There was not enough number of productive sections in the midterms. In addition to writing a dialogue question, word formation, sentence completion, re-write, open-ended question types can be added to the midterms"*
Instructor 47: *"The mid-term exam evaluation takes a long time. It prevents fair assessment. Speaking takes too long and it is unnecessary. If the number of tasks is reduced to 1, we can also save time. It's not exhausting, as well"*
Instructor 43: *"Language usage in midterms is easier compared to students' level."*
Instructor 1: *"In our midterm, the vocabulary section was insufficient. There should be more vocab questions. vocabularies should also be asked as single items."*

Concerning the writing exams (writing portfolio), it is frequently stated that the students could enter the exam by memorizing the text they are going to write and; therefore, a real assessment and evaluation could not be made because the same task in the book is asked in the exams. In order to solve this problem, it is suggested that the activity in the book be changed and asked in the exam. Secondly, the lack of opportunity to give feedback to the example paragraphs of the students is another problem concerning the writing exams. As a solution, it is suggested to adopt a process-oriented approach instead of product-oriented writing and to use different correction techniques (such as codes) while giving feedback to the students. Apart from the two problems, some suggestions are made for the problems related to the criteria of the rubric used for grading the writing exams. Final problem expressed is that actual performance of the students during the writing exam cannot be evaluated because of the model paragraph reflected on the board.

Instructor 14: *"The biggest problem for the writing portfolio is that the student memorizes the writing tasks in the book and writes it in the quiz. We can't control it and we have to give them a high score because they write without error. The task given in the book should be changed a bit and given that way."*

Instructor 4: *"It is not fair to give exam to the students immediately after teaching the subject. First, we should teach and then make students write the first draft in class and give feedback. Let's do the exam a week later according to the feedback given in the class. We can allow students to write the second draft in the exam and evaluate it. Teachers should use the correction code in these drafts and students should search and find.*
Instructor 6: *"When the model paragraph is turned on, they just completely copy it. What they learned???, we cannot understand ..."*
Instructor 23: *" The use of simple and complex sentences should be added to the writing criteria "*
Instructor 41: *" rubrics should be reviewed. Even the student who makes it very bad gets at least 70. This tolerance is too high for the pre level. rubrics should be more distinctive"*

Related to project presentations, problems as to the timing of project presentations are expressed. According to the instructors, especially A1 students are not prepared for the project presentations in the first weeks. For this reason, it is proposed that the first projects be carried out at a later date. The second problem is the high number of project presentations made in a single term. For these problems, it is suggested to make an additional quiz instead of the first term project presentation and to start project presentations in second term. In addition, the instructors state problems arising from the students. These problems are as follows: students not performing the projects properly (low performance of students), students not finding the project presentations effective in terms of learning English, students unwilling to do the project assignments that require video shooting, the lack of interest in the project subjects, the decrease in the number of students preparing presentations in the second term, and students taking the projects from each other and presenting them in the classroom. Suggested solutions for these problems are as follows: identifying a single format instead of project assignments in different formats, monitoring the progress of students' performance throughout the year, getting ideas from students for different projects and presenting options to students instead of forcing them to prepare projects in a single format.

Instructor 1: *"The first project date is very early in beginner and elem levels. It can be done a little later. Their language level is insufficient."*
Instructor 19: *"the project topics are generally not of interest to the students. Literature review and citation can be given to students as project work.. The students may be offered options or decide on the project subject"*
Instructor 20: *"Something is not fully understood, I do not know whether this is due to students, but student performance is very poor. Just one project each term is okey, and two projects each semester do not contribute much to students' learning. Beginner level students may also not do project work in the first term. For example, not all students want to shoot video. Participation is dropping thoroughly in the second term. Students take projects from each other"*
Instructor 12: *"Students should make just one project in a term and plan the project step by step with the teacher. Drafting and making presentations once doesn't do much for them"*
Instructor 31: *"Projects should focus on the fun part of English. Students don't have to always make serious presentations. They say I won't get the points. There should be projects that students will have fun and be exposed to English"*
Instructor 42: *" Our second term project was confusing and challenging. The goal was not to learn English, but to force the students. If the aim is English, we should not push too much"*

The last problem in relation to assessment is the lack of an assessment system to evaluate students' class performance. Regarding the problem, it has been proposed by instructors to adopt a system that allows to evaluate students' classroom performances.

Instructor 8: *" We should be able to give CPG (class performance grade) to the student. This is necessary to assess students' participation in the class."*

Last, problems concerning the general structure of the curriculum are analyzed under the titles of administrative problems, physical problems and problems as to number and level of students in the classroom. The problems related to the structure of the curriculum are given in Table-5.

Table 5. Problems and solutions related to the general structure of the English preparatory curriculum

Problem	Suggested solution
Physical problems	
Bad sound system	
Problems as to number and level of students in the classroom	
Overcrowding of the classes due to the passing grade	Repeat students should be given the right to take the final exam and mid-term exams even if they don't attend the lessons.
Lack of homogeneous classes in terms of language level	Forming a class by bringing together higher-level students
Administrative problems	
Negative effects of overcrowding of the meetings	Reducing the number of instructors attending the meetings by ensuring their attendance to the meetings in regular turns
Lack of institutionalism that causes inconsistencies in decisions made	Decisions should be questioned and the reasons for the decisions taken should be shared with all department members.
High course load of instructors	

As can be seen in the Table-5, bad sound system used for listening activities in classrooms not only prevents students from performing listening activities effectively but also puts the students at a disadvantage in exams.
Instructor 21: *"The sound system of classroom 224 is very bad, we have difficulty in listening to activities and students are victimized in quizzes but it is not repaired."*

In addition, some administrative problems have been diagnosed regarding the general structure of the curriculum.
Instructor 35: *"to talk about me, I teach in 2 classes in FLD and 3 different faculties, additionally. In FLD, my work load is not less than other friends. I'm falling apart. I want a fairer schedule"*

Finally, problems related to number and level of students in classrooms are expressed and solutions are given.
Instructor 12: *"I think the 70 pass grade is a good decision, but for this reason the number of repeat students will increase and the classes will become more crowded. We can encourage them to sign up at the beginning of the year and be prepared for the proficiency exam with their own means without attending the lessons during the year. We can give them the right to take 3 midterms and one final, not just the final exam. Or we can remove the necessity of attendance from repeats as in faculties. "*

Discussion and Conclusion

The aim of this study is to explore the problems encountered in the English preparatory curriculum of Eskişehir Osmangazi University Department of Foreign Languages and to propose solutions to these problems according to the opinions of the instructors. In line with the aim of the research, the problems related to the objectives of the curriculum, instructional materials, assessment and evaluation system, and general structure of the curriculum are defined and the solutions are suggested.

The lack of clarity is one of the problems related to objectives of the curriculum. Although the aim of the English preparatory curriculum is determined as the B1 proficiency level (TEPAV, 2105) according to the European language framework, it is not clear exactly which skills and structures the B1 level covers. Therefore, the course book decides the objectives. Similar to this result, Keser & Köse (2019) expresses that although the aim of English preparatory curriculums at higher education level is to prepare students for their departments and the global world, the scope of this aim remains unclear. In addition, no guidelines have been prepared by the Council of Higher Education (YÖK) to indicate what criteria meet this objective. The main aim of the education given in the foreign language preparatory class is to "teach the student the basic rules of the foreign language, to improve the vocabulary of foreign languages, to understand what he reads and hears in the foreign language, to enable him to express himself orally and in writing" within the scope of the related regulation of the Higher Education Institutions (YÖK, 2008). However, criteria for this goal should be determined and this confusion regarding the aims of preparatory education curriculum should be eliminated.

Another problem related to the objectives of the preparatory curriculum is that intense content especially for A1 and A2 levels, which prevents the achievement of the objectives. One of the reasons of intense content in is the unrealistic goals set for students. According to the report prepared by TEPAV (2015), most of the students are accepted to preparatory program with A1 or A2 level English since the language proficiency level of the students is not assessed in the university exam. As a result, it is not possible for students to reach the desired B1 qualification level within a year. According to the TEPAV (2015) report, it is impossible for students to reach the B1 qualification level after 8 months of education when the proficiency level of entry into the program is considered. However, since this situation is not always understood, ELT Instructors at universities feel accused by academics and departments of failing to achieve the impossible. In order to overcome this problem, it is necessary to take realistic measures to improve the quality of English courses offered at secondary and high school levels or to make realistic decisions about the objectives and duration of preparatory curriculum at higher education level.

Regarding the problems related to the teaching materials, it seems that the problems result from the fact that additional materials prepared by the coordinators are not complementary to the deficiencies of the book. İt is obvious that a course book is a tool in achieving the objectives, and it would not be right to expect a course book to be complete. Therefore, the deficiencies of the book should be compensated by the intervention of the instructors to the activities when necessary or with the supplementary materials provided by the coordinators. According to results of an existing study on textbook adaptation techniques of instructors in a preparatory school at higher education level, instructors have a positive attitude towards adapting the activities in course book. Most common techniques used to adapt the course book are modifying the activities, or adding and activity out and using another one instead (Yalçın, 2016).

Existing studies in higher education preparatory classes also included problems related to course materials. The study conducted by Şen Ersoy & Kürüm Yapıcıoğlu (2015) shows students' concerns about following the course book throughout the entire year. However, contrary to this finding, Karanfil & Aytunga (2019) states that one of the strengths of the course book is that it is suitable for the purposes of the course so following the course book is necessary. In the same study, intense content is expressed as one of the weaknesses of the course book. Similarly, according to the results of the study conducted by Akpur (2017), students find course materials supportive to learning.

Related to the assessment and evaluation processes of the curriculum, opinions were given on the quizzes, mid-term exams, project presentations, writing exams (writing portfolio), and classroom performance evaluation grades. Midterm exams and quizzes are criticized for the fact that in exams, questions assessing language use are less in number than the questions assessing grammar and vocabulary. This may stem from two reasons. Firstly, instructors find grammar and vocabulary questions easy to assess and evaluate compared to the questions that evaluate language use. The second reason is that there may be more grammar and vocabulary-enhancing activities in learning and teaching processes, and these structures should be included in the assessment and evaluation processes.

Related to the former reason, alternative assessment and evaluation techniques may not be found by instructors efficient in terms of time and effort. According to the results of a study on alternative assessment techniques in preparatory curriculum at higher education level demonstrates the concerns related to expanding workload instructors will have cope with. Also, instructors worry about the objectivity of such assessment techniques (Özuslu, 2018).

The latter reason is supported by different studies. The findings of a study conducted by Uysal and Güven, (2018) and Aygün (2017) in the Department of Foreign Languages of Eskişehir Osmangazi University, which is the context of the research, show that grammar-oriented courses affect students' affective characteristics negatively. Similarly, according to the results of a study conducted by Gökdemir (2005) in 5 different universities in Turkey, lessons in preparatory classes are mainly theoretical and students do not find enough opportunity to practice the language. In addition, students are not active in English classes. The courses are consistently teacher-centered, and the students are not assigned tasks related to the course.

Another problem as to midterms and quizzes is that the quizzes are not parallel to the midterms and different quizzes do not match each other. In order to solve this problem, instructors suggest that coordinators should be authorized to give feedback to the exams and make changes in exams when necessary. However, this proposal expands the workload of coordinators who already cope with a heavy workload during the academic year.

In addition, the results about the project presentations show that some of the lecturers attach importance to improving grammar and vocabulary rather than speaking skills because they suggest project presentations that start after the students (especially in A1 and A2 proficiency levels) acquire some grammar and vocabulary

knowledge. This finding proves ELT Instructors' belief that grammar and vocabulary is a priority in language learning. However, a teacher should not expect a newly taught rule to be used immediately by the student and should know that each student will go through some language processes, so in this learning process he needs to create opportunities for the student to use the language, make mistakes and learn from these mistakes. In other words, teacher should encourage students to use language communicatively. Given that students can do language analysis when they reach a certain level in the target language, focusing primarily on grammar can be defined as an effort to do the last thing first (Paker, 2012).

Regarding the writing exams, the most common problem is whether or not the same task given in the book is asked during the writing exam. Because when the same task in the book is asked in the exam, students can easily guess it and take the exam by writing and memorizing this paragraph at home. As a result, students get consistently high scores from the writing exams. This issue can be evaluated from two aspects. Firstly, if the aim is to assess the writing skills of the students, the writing exams as such do not exactly assess the progress of the students. Instead of asking the same task in the book, the tasks may be asked to the student with a little change, or one of several tasks may be asked randomly in the exam without informing the students. From the latter point of view, when writing and memorizing the expected paragraph, students are exposed to language and; as a result, language learning takes place. Language learning is a result of effort and exposure. An individual's learning the language will take place at his/her level of exposure to that language (Walberg, Hase & Rasher, 1978). It can be said that the current practice prolongs the student's exposure to language and provides learning.

The present study is significant in terms of exploring the problems that impact negatively upon the learning quality of English language in the higher education institutions and proposing solutions to these problems. On the other hand, more extensive and wide-range studies are needed to solve the problems as to English language learning in preparatory programs at higher education level. In particular, the studies that aim to improve the quality of language learning and teaching at pre-university levels are necessary to overcome the problems related to the objectives of the English language preparatory curricula at higher education level. For this purpose, the researches can be designed in cooperation with the Higher Education Institutions and Turkish Education Ministry.

In addition, students' views are as crucial as the views of instructors in curriculum development process. Therefore, the views of the students may be taken in addition to the views of the teaching staff. Last, wide-range studies done in cooperation with different universities will let the curriculum makers gain different perspectives in this process and support curriculum development process.

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A Phenomenological Research on the Evaluation of Teacher Candidates from the Perspective of School Administrators

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A Phenomenological Research on the Evaluation of Teacher Candidates from the Perspective of School Administrators

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Abstract

Teacher candidate education is an important stage in the education system. In this research, it was aimed to reveal teacher candidates from the perspective of school administrators. In the research, phenomenological design, a qualitative research method, was used. The participants of the study were ten school administrators who work in state schools. Criterion sampling and chain sampling were adopted. Interviews, observations and documents were used as data sources. Descriptive analysis was used for data analysis. In the reliability-validity phase of the research, data diversity, extensive field work, external audit and direct quotation strategies were used. According to the research data, three themes emerged. These were thoughts on teacher candidate, effect of environmental factor on teacher candidates, effect of school administration on training teacher candidates. In the last part of the research, suggestions for both practitioners and researchers were presented.

Key words: Teacher candidate, School administrator, Qualitative research, Phenomenological design

Introduction

Having qualified employees are essential for organizations to achieve their goals. This is the case for the education system, too. In teaching profession, teacher candidates are to go through some stages from pre-service to in-service education. The first stage of teaching profession is teacher candidate education period which includes approximately two years. In the related literature, it is possible to encounter the evaluations and research studies about new (candidate) employees. According to James, Conolly, Dunning and Ellott, 2006; Hoy and Miskel, 2010; Katzenbach and Smith, 2011, being teacher candidate is a process that needs attention. James, Conolly, Dunning and Ellott (2006) emphasize that a teacher candidate should exactly know what profession he / she is to do at the beginning of the process and should have personality characteristics that are worthy for the profession, and that it should be determined whether he/she is an appropriate teacher candidate. Hoy and Miskel (2010) also emphasize the importance of organizational socialization of teachers which bring harmonization with social and personal structure in the school and support a positive school climate. Katzenbach and Smith (2011) also draw attention to the importance of teamwork, an action that can affect the whole process. They explain the main points for teamwork as follows: Having common goals, determining the performance targets, having necessary knowledge and skills in individual and professional terms, understanding for contributing to doing business, and entering into common obligations.

Training of the teacher candidates in the profession is another point that is noticed. At this point, it is possible to observe the research studies that show the training program contributes to the adaptation and training of the teacher candidates (Alataş, 2017; Pala, 2017) and there are too many deficiencies in the program and in practice (Çimen, 2010; Kaymak, 2017). The attitude towards the profession also plays a decisive role. The researches, Orhan (2013) and Erkoç (2010), showed the attitudes of the teacher candidates towards the profession. The authors mentioned above indicated that the teacher candidates have positive attitudes towards the profession. Job satisfaction of the teacher candidate who likes the profession and chooses it eagerly is higher than those who choose it by having different opinions. The attitudes mentioned are also observed in the problem-solving point.

One of the points that should be considered in the adaptation and preparation of the teacher candidates is the interaction and communication of the teacher candidate with the environment (Balcı, 2000; Ball and Forzani, 2009; Ergünay, 2018; Everard, Morris and Wilson 2004; Kozikoğlu, 2016; Umur and Demirtas, 2015). Ball and

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Forzani (2009) mentioned that the teaching profession includes many basic skills, and they define the communication with families as one of them. Everard, Morris, and Wilson (2004) state that one of the tasks of the school administrator is to organize and balance the educational needs of the environment as much as possible. Thus, they emphasize that the school administrator acts as a bridge to the interaction of the teacher candidate with the environment. Balcı (2000) looks at the issue from the perspective of organizational socialization and states that the organization can adapt the employees to the organization by benefiting from different socializers. He defines the school (with the institution itself and its employees) as a family and as one of the factors that contribute to the socialization of the individuals in the organization and which is called as the socializer. According to a similar research by Umur and Demirtas (2015), organizational socialization of teacher candidates is high, and the candidate teachers see themselves as social. According to the research, this level is higher in social branches compared to other branches. Ergünay (2018) evaluates the school-environment interaction in terms of school-university interaction. According to him, the lack of adequate interaction between school and university is a barrier that damage the development of teacher candidates. Kozikoğlu (2016) points out the determining role of the physical environment in which the school is located. According to the research conducted, depending on the socio-economic level of the region in which they work, the teacher candidates may experience various problems in meeting the basic needs, especially transportation.

One of the important elements in terms of the adaptation and preparation of the teacher candidates is the interaction between the teacher candidate and the school administration. According to the researcher, the school administration, which follows all the bureaucratic processes of the teacher candidate, constitutes an important point for the professional life of the teacher candidate. Hill (2010) emphasizes that the role of the administrator in the organization is to help the subordinates and to provide an environment in which they can be successful and comfortable. McEwan (2018) states that the school administrators have a wide range of tasks such as mobilizing employees, facilitating their work at the school, caring for them and communicating with them, being open to criticism, listening to the views of the people in the environment and the employees, and making the students involved in the school process. In a brief literature it is possible to find different research results and evaluations (Çakır, 2016; Ergünay, 2018; Kozikoğlu, 2016). Ergünay (2018) stated that the teacher candidates have improved in communication and professional skills, knowing school, social environment, and institutional structure, and implementing teaching strategies in time thanks to the contribution of school administrators and colleague; however, he reported they did not experience any problems based on the school administration. Çakır (2016) discusses the relation between teacher candidates and school administrators from two points. The first one is the approach which school administrators disseminate evaluation throughout the process. The second is spending little time with the school administrator which cause for teacher candidates, not benefiting from their experiences, and showing the deficiencies seen in some of their professional knowledge. According to the research conducted by Kozikoğlu (2016), the teacher candidates suffer from different kinds of problems (environment, physical facilities, classroom administration) in their profession. The research carried out by Doğan (2015) presents a different result which showed that the teacher candidates do not get enough support from the mentors and school administrators. The lack of getting support may lead the teacher candidates to feel themselves uneasy. In addition, the teacher candidates participating in the research thought that there were some situations in which the school administrators did not act fairly, and that this situation caused them not to feel engaged in the school. Tünay (2017) defines the required things that the teacher candidates should do during this process as being in good communication with the school administrators, other colleagues and the environment, contributing to the activities inside and outside the school, and learning and teaching the bureaucratic issues.

In the literature, the researches on teacher candidates were conducted in the CHE (Council of Higher Education) thesis bank at the national level and in the ProQuest Dissertations & Theses Global database at the international level. In the database of the CHE thesis bank, there were 43 theses, 39 of which were masters and 4 of which were doctoral theses. Only 2 of them examined the relationship between the teacher candidate and the school administration. Only the thesis prepared by Çimen (2010) was accessed from these 2 theses and included in the research. In ProQuest Dissertations & Theses Global database, 200 theses which were thought to be about teacher candidates were scanned and 3 of them were included in the research. In the theses, teacher candidate programs and process, evaluations, thoughts, perceptions and problems related to teacher candidate were generally chosen as research subjects. The current research subjects in the theses show that the connection of the teacher candidates with the school administrator has not been adequately investigated. The teacher candidate - school administrator perspective is examined in this research owing to the requirements mentioned before. Therefore, this research is expected to contribute to a better understanding of the teacher candidate -school administrator interaction and to handle the subject from different perspectives in the studies to be carried out in the future. The purpose of this research is to reveal the teacher candidate from the perspective of the school administrator. For that purpose, the following questions were investigated:

1. How do school administrators perceive the teacher candidates?

2. According to the school administrators, how does the teacher candidate -environment interaction occur?

3. What do the school administrators think about the school administrator- teacher candidate interaction?

Method

In this section, what has been done in order to perform the purpose of the research was stated, and a detailed explanation was presented.

Research Design

Qualitative research allows to spend a large amount of time in the field, to draw themes and categories from large data masses, to reveal the perspective of participants, and to provide flexibility (Creswell, 2016). According to Merriam (2015), the aim of the qualitative research is to show how people make their experiences and how they make sense of their lives from the perspectives of the participants. According to Christensen, Johnson and Turner (2015), phenomenology is a "qualitative research method in which the researcher tries to explain how one or more participants experience a phenomenon (event, situation, concept, etc.)". Phenomenology is a design that treats reality and experiences individually and is based on the objectivity of the researcher as much as possible. The focal point of the phenomenology is to come to the bottom of the experience by questioning the experiences related to the phenomenon revealed in detail (Creswell, 2016; Ersoy, 2016; Merriam, 2015b). As the present study aim at understanding the teacher candidates from the perspective of the school administrators, phenomenological design was used. The interview form, which is formed from the points mentioned in the research, has been tried to be examined in detail by using different data sources through the observations and document analysis.

Three points were considered in determining the method and design of the research. These are (i) to express their views in a sincere manner when two school administrators who were expected to participate in the research were asked about the research, (ii) to express that the opinions of these two academicians on the basis of the experiences of the school administrators about the subject will perform the purpose, when the pilot practices of the research were being discussed with two academicians who had previously done research on the subject through the qualitative research method and are thought to be experts in the field, (iii) that school administrators who participate in the research process can respond to all questions by basing on their perceptions and thoughts shaped by their experiences. Upon these three points mentioned above, it was decided to conduct the research in qualitative research method and phenomenological design.

Study Group

The participant group of the research consisted of eleven school administrators, who are able to contribute to the research with their opinions and experiences, have worked with candidate teachers, are still working in official schools and are thought to be volunteers to contribute to the research. However, it was understood that the data obtained from one of the participants consisted of short answers that would not serve the purpose of the research and would not allow any description. Therefore, the answers of this participant were excluded from the evaluation; thus, the number of participants was ten. It is thought that the experience of the researcher as both a school administrator and a teacher is effective in determining the participants. The fact that the researcher has the opportunity to meet with the school administrators in formal and informal settings, to contribute to the research, to know the school administrators working with the candidate teachers, and to work as a school administrator with a candidate teacher can be considered as a reflection of the stated experience. Criterion sampling among the purposive sampling strategies was used since the research included the school administrators who are working or have worked with candidate teachers. Yıldırım and Şimşek (2011), consider the criterion sampling as studying according to the previously defined criteria. The criteria may be determined either by the researcher or previously. In addition to criterion sampling, the chained (snowball) sampling was utilized by taking into consideration the opinions and recommendations of the school administrators who participated in the research. At this point, the school administrators who recommended the school administrators were asked three points about the recommended school administrators and the recommended school administrators were included in the research. These are (i) whether they have worked with candidate teacher or not, (ii) whether they will participate voluntarily in the research, and (iii) whether they can clearly answer the

research questions. Apart from one of the recommended school administrators, others were included in the research because they were considered to be suitable for the three mentioned situations. According to Miles and Huberman (2015), the purpose of the snowball (chained) strategy is to identify the situation of those knowing who is familiar with what information is rich in knowledge. Two factors were effective in determining the sampling size. These are the related literature and the data obtained... When the literature is examined, it is understood that there is no limitation for the sampling size in qualitative research and that the sampling may change according to the questions, data, and sources (Merriam, 2015c; Patton, 2014a). Secondly, the high number of similar points supporting each other in the opinions of the participants made it clear that it was appropriate for the researcher to limit the participant group with ten participants. The research was planned to be carried out with eleven participants based on two points; however, the opinions of a participant were excluded from the research for the reason given; however, more participants were not required as the opinion of ten participants was sufficient to provide sufficient data for the research. In addition, the data of the two pilot practices were included in the research and four participants were reached from these two participants. All of the ten participants in the research were chosen through the criterion sampling, and four of them participated in the research in accordance with the chained (snowball) sampling strategy. Information about participants was presented in Table 1.

Table 1. Information about participants

Gender				
Male			Female	
10			0	
Branch				
Classroom Teaching	Religious Culture and Moral Knowledge Teaching	Physics Teaching	Mathematics Teaching	English Language Teaching
5	2	1	1	1
Assignment				
Principal			Deputy principal	
8			2	
Seniority of teaching				
0-5 year	6-11 year	12-17 year	18-23 year	24 and more than 24 years
1	3	2	3	1
Seniority of administration				
0-5 year	6-11 year	12-17 year	18-23 year	
2	5	2	1	

According to Table 1, it is observed that the majority of the participants are male, the classroom teaching branch is higher than the other branches. In addition, all the participants are married, and the majority of the administration seniority is between 6 and 11 years. Not the real names of the participants but the given code names were used in presenting their opinions. The coding is provided as SA1, SA2, or etc. All of the participants work in public schools.

Ethics in Research

Ethics in research was taken into consideration in terms of two aspects. Initially, the required corporate permission was obtained. This permission for this research was obtained from Istanbul Provincial Directorate of National Education with the letter dated 08.07.2019 and numbered E.13083555. Secondly, the necessary permissions and appointments were individually received from the participants. After acquiring all these permissions, the research process was carried out.

Data Collection

The interviews, field observations, and documents were used as data source in the research. A semi-structured interview form was used for the interviews. The opinion of a school administrator, who was thought to be able to contribute to the research, was taken for the research subject (in the context of the relationship between candidate teacher and school administrator). In addition to this, the research subject was discussed with an academician who is working in the field of educational administration and has done qualitative research. Then, the interview form was piloted with two participants. As a result of the pilot practice, the implementation of the form was continued in terms of two indicators. These are (i) that the respondents are able to understand and respond to the questions and (ii) that the participants have given the answer of "coherent" to the question "Do you think the questions of the research are coherent with each other?" asked to each participant in the interview form. According to the data obtained and the status of the questions to serve the determined purposes, the interview form was reviewed, and the form was conducted to the other participants by taking the opinion of "There is no need to make a change in the interview form" from the two academicians and two Turkish teachers who were experts in their field. The form consists of two parts. The duties, branch, occupational and administration seniority information of the participants are included in the first part. In the second part, 10 main questions and 13 probes were asked about the research topic. The questions are the questions about the observations of the candidate teachers, the candidate teacher system, the professional attitudes of the candidate teachers, their interactions with the environment, and their connection with the school administrator. One more question was asked to the participants about the research ethics, the relevance of the questions to the research, and the points to be added to the research. In addition to the main questions, probe questions were also used in the interviews. According to Merriam (2015d), the probe questions are a practice to ask more information and to get more explanation from here. After the interview form was finalized, it was put into practice. The research report was sent to two academicians and two school administrators who were not related to the research and their criticism was received. The research was reviewed through the evaluations taken from these people. Thus, the efforts were made to evaluate the research from the different perspectives. The second data source for the research is the observations of the researcher. According to Merriam (2015e), field observation contributes to research in two ways. The first allows the researcher to take more responsibility for the identification and evaluation of the findings. The second one is to allow the participants to better understand their behavior during the research process. The observations made in the research were discussed in two dimensions. The first dimension is the observations made before, during, and after the interview. The physical environment, attitudes of the participants towards the research and the researcher, noticeable points in the research, the opinions of the researcher about the interview and the participant were included in the research. The second dimension is the observations that the researcher made when he had worked with a candidate teacher for one year during the school administration. The researcher worked with the teacher candidate in various activities starting from the introduction of the school. Hence, teacher candidate's style of doing the tasks given at school, communication with stakeholders, individual and professional attitudes and behaviors were included in the research. The researcher worked with the teacher candidate, wrote his observations during the research process, and was in contact with the school administrators working with teacher candidates in different schools is thought to be beneficial for the research. These contributions are listed as follows: Interviews were conducted more effectively. The findings were better understood. It also contributed to the better interpretation and evaluation of the relationships among the findings. The data related to the two observation groups were included at the end of each theme in the findings and comments section. Documents were used as the third data source in the research. Patton (2014b) states that documents can be included in research. The number and type of these documents may vary according to the research. The documents that can be used in the research may include the official publications, reports, personal correspondence, diaries, photographs, and so on. Data from the documents are also included in the findings and comments section at the end of each theme. Documents based on document analysis are as follows:

- National Education Fundamental Law numbered 1739
- Ministry of National Education Regulation on Teacher Assignment and Relocation
- Ministry of National Education Regulation on Training Preservice Civil servants
- Teacher Strategy Document 2017-2023
- E-Manual for Passing to Constitutive Teacher Exam

The reasons for the above-mentioned documents to be included in the research are as follows: They include the regulations related to the teacher candidates. They also include the various rights and duties from the appointment of the teacher candidate to their development process, and the studies that are planned to be done about the teacher candidates.

Data Analysis

The data were recorded with the voice recorder and the analysis were made using this device. After the interviews were transcribed, they were sent to the participants and after their approval, the analysis of the research was started. According to Glesne (2015), data analysis is a process that is applied to regulate the data in an order. Coding was carried out in data analysis. Open coding was preferred in coding. After reading the research transcripts three times, the prominent and noticeable points were noted, and the relationship between them and their meaning were examined, and the codes were tried to be made, and the categories were tried to be organized upon the codes, and the themes were tried to be reached after the categories. The given coding-based research is shown in Table 2. According to Neuman (2010), open coding is "the first coding of qualitative data and that the researcher summarizes analytical categories or codes in the form of preparation by examining the data". The descriptive analysis technique was used in the analysis of the data. Yıldırım and Şimşek (2011) draw attention to the importance of intensely placing the views of the participants in the descriptive analysis. The purpose in giving the opinions is to present the findings to the reader in a regular and interpreted manner. Here, what the researcher should do is to explain the descriptions by considering the cause and effect relationship and to reveal the results. In this research, the implementation of the descriptive analysis appears in the form of directly transferring the opinions related to the research in the data, findings and comments section and explaining what the transferred quotations mean for the research. In other words, the connection between the quotations and the reader has been established by taking the concepts of related literature into consideration. Thus, it is aimed to analyse the data in more depth.

In the analysis of the observations, the observation notes were initially read, and then the notes were brought together. In the second stage, the observation notes were reviewed - in particular the observations about the period in which the researcher worked with the teacher candidate. Then, the observations related to the research that were thought to contribute to the research were determined. The notes that would not contribute to the research were excluded from the research. Finally, the observation notes were matched with the appropriate themes and included in the research. In the analysis of the documents, all the determined documents were read first. Subsequently, the items and explanations related to the research were identified. Only the identified explanations and items were included in the research. Finally, the obtained data are presented through the appropriate themes and observation notes.

Four of the strategies indicated by Christensen, Johnson and Turner (2015) were used to increase the reliability-validity of the research. These strategies and their use in research were as follows:
Data Diversification: The data were collected through applying the semi-structured interview form to ten school administrators, the observations of the researcher, and the documents related to the research (especially through legal texts). In the findings and comments section, the data are respectively given in the form of quotations, observation notes, and document analysis. Comprehensive Field Study: The literature related to the field of research was scanned, and the studies on the field were seen, and a basis was established for the interview form. In addition, the observations of the researcher obtained from working with preservice in an academic year were evaluated within this scope. External audit: The data collected from the research before, during, and at the end of the research were discussed with two academicians and participants who were experts in the field, and the data that were not contributed to the research and the comments based on these data were excluded from the research. Direct Quotation: When the findings are examined, the quotations which were obtained from the audio recording device and were transcribed were used. Thus, an attempt was made to provide a cohesion between the interpretations made in relation to the research and the quotations.

Findings and Comments

In this section, the themes and categories created based on the findings obtained are given. It was seen that the following themes emerged based on the findings of the research:

- Thoughts on Teacher Candidate
- Effect of Environmental Factor on Teacher Candidate
- Effect of School Administration in Training Teacher Candidate

Table 2. Themes and categories emerging in research

Theme 1: Thoughts on Teacher Candidate	Observations	Positive
		Negative
	Training	Sufficient
		Insufficient
Theme 2: Teacher Candidate - Environment Interaction	In-school	Colleague
		Student
	Out-of-school	Parent
		University
Theme 3: Effect of School Administration in Training Teacher Candidate	Roles	Supportive
		Identifying the structure
		Experience transmitter
		Transducer
		Introducing the practices
	Preparation	Planning
		Coordination
	Evaluation process	Applying the procedures

According to Table 2, three themes, seven categories and sixteen sub-categories appear in the research. It is seen that there is more category in the theme of effect of school administration in training the Candidate teachers than in other themes.

Theme: Thoughts on Teacher Candidate

It is understood that the observations and the ways of raising them have come to the fore in the thoughts of the participants on the candidate teachers. Considering the opinions of the participants about the teacher candidates, there are both positive and negative thoughts about them. While their positive points can be explained as their search for doing something, the negative points can be solved by experience. Two important factors come to the forefront in the development point: mentor and attitude towards profession. It is understood that working with mentors will contribute to their development. At the same time, it is noteworthy that an important issue in the development point is the approach to the profession. However, it is understood from the opinions that the attitude towards the profession will progress in a whole through the training received over time. The opinions of the participants are as follows: SA2: *"They're good in technology; but the sense of duty and sacrifice are not too good"*. SA3: *"They are eager, but technical information is insufficient ... Through the adaptation programs, we are doing motivation studies to love the profession and students"*. SA5: *"They are excited and anxious. They're trying to prove themselves"*. SA6: *"The compliance of the teacher candidate with the consultant teacher is a very important start"*. SA7: *"They show the lack of confidence and practice. But they are constructive, open to cooperation, and prone to learning"*…

The participants show different opinions on the point of training teacher candidate system that is currently being applied and is changing. When the opinions are examined, although there are areas where the system is sufficient, the situations where it is insufficient are also mentioned. In addition to the developmental characteristics of the mentor teachers, the participants state that there is a lack of contribution to the process and a number of deficiencies. The opinions of the participants are as follows: SA1: *"I believe the current system is useful"*. SA2: *"Stationery and bureaucracy should be avoided. Practical work should be done"*. SA7: *"Practice should be more. It certainly has a positive contribution to the professional experience. Teacher candidate training process is effective both for teachers candidate and mentor teachers"*. SA8: *"If the teacher candidate training program is implemented properly, the training given is sufficient. But if you just fill out the attachments and complete the documentation, this process becomes useless"*. SA9: *"The system has a contribution. First of all, the mentor teachers were trained, and then the courses were carried out with the teacher candidates"*. SA10: *"...I certainly don't find it sufficient"*.

According to the observations of the researcher, the participants take the formal tasks into consideration in order for the teacher candidates to adapt to the system. As understood from the files prepared by the participants about the process, the process is mainly followed through the documents coming from the ministries and national education directorates - these are presented in detail in the form of document analysis. The school administrators officially administrate and direct the process through the determined mentor teacher by using their own initiative. During the first meeting, that the participant made a phone call with the teacher who passed his/her

candidate period in his school and was assigned somewhere else and that the teacher explained his/her experiences during his/her candidate period in a spirit of contentment and gratitude supported the stated observation. This situation shows that trust is established between the researchers and the participants. It is thought that this situation will provide reliable data through the sincere answers. At the end of the process, in that the teacher candidate thanked to the school administrators and shared this joy with the school staff in the school where the researcher is employed also supported the stated situation. Also, the postponement of the phone calls or face-to-face interviews by the participants during the research process showed that the participants pat attention to the research.

It is seen that all of the documents related to the research give weight to the official dimension of teacher candidate system. This is also evident in the interviews and observations. The following documents show that there is an undeniable place for the teacher candidate in the education system. In addition, the documents indicate that a separate place and importance are given to the teacher candidate within the profession. In the obtained documents, the teacher candidate is given as follows:
1. National Education Fundamental Law numbered 1739: In Article 43 of the Law, after teacher candidate period, the teaching profession is divided into three career steps: teacher, expert teacher, and head teacher. In the same article, the regulations on this process - points for evaluation and assignments - are given (MoNE, 1973).
2. Ministry of National Education Regulation on Training Preservice Civil servants: "_civil servant candidate:_ Being successful in the exam applied to those who are to be assigned to the civil servants for the first time and are to be assigned to the central and provincial organizations of the Ministry in order to take basic education, preparatory training, and internship, …" (MoNE, 2017a).
3. Teacher Strategy Document: It has identified six important points about the teaching profession. One of them is the training related to candidate teacher and integration (MoNE, 2017b).

Theme: Teacher Candidate – Environment Interaction

The participants demonstrate the interaction of the teacher candidate with the environment in such a way that they can be defined as in-school and out-of-school. They determine the colleagues and students as in-school and the parents and university as out-of-school. It is stated that the level of communication with the colleagues and students who can be mentioned as in-school environment is good and that there are no problems. It can be said that this situation has a positive effect on training the teacher candidates. Although the communication is not at the desired level at the candidate, it is gradually developing. The opinions of the participants are as follows: SA4: *"it is not different from the constitutive teacher although it depends on the teacher and the school environment"*. SA5: *"His/her relationship with colleagues is respectful and open to learning. He/she is timid with his/her students, but progresses in ways that help the students in every way"*. SA6: *"The relationship with colleagues is positive. The interaction with students is positive"*. SA8: *"Since the teacher knows that he/she is the teacher candidate, they help him/her with everything..."*

It can be stated that the interaction of the teacher candidates with the out-of-school environment is less intense than the interaction in the school. It is understood that the communication with parents is not at the desired level due to not being sufficiently discussed and being distanced from communication. It can be said that the communication with the university depends on the failure of a teacher candidate to catch a level of communication after the graduation of the school; however, it is seen that the communication outside the school is also important. The opinions of the participants are as follows: SA1: *"The communication with parents is good, and there is cooperation between them. University education is the "key". They need to use this key well in the profession"*. SA3: *"The interaction with parents is self-enclosed"*. SA4: *"It is necessary to increase the practice time and to focus on teaching techniques, classroom administration and inclusive education. After-school training (interactive board, first aid, etc.) can be given during the university education"*. SA8: *"He/she has difficulties in relations with his/her students, parents, and colleagues"*.
According to the observations of the researcher, the participants take measures to contribute to the role of the teacher candidates in the environment. For this purpose, it is an application which can be evaluated in order to enable the teacher candidate to meet his / her colleague who is found to be successful in the professional sense. In addition, as in the case of the researcher and other administrators, ensuring participation of teacher candidates in the visits to parents, giving them a place in assigned tasks, and declaring officially the assignments in the teacher's room are thought to support the data and comments specified above.
In the following documents, it is seen that the teacher candidate gives importance to the environment, regulations that will reinforce his / her interaction, and the importance of employing the teacher at the desired level from the environment is tried to be put forward. It is thought that the activities, mentioned in the

interviews and observations, which will ensure the interaction of the teacher candidate with the environment are tried to be supported with the mentioned documents. The documents related to the interaction of the teacher candidate with the environment can be given as follows:

1. E-Manual for Passing to Constitutive Teacher Exam: In the 3rd article of the guide, it is stated that 30% of the exam to be held includes National Education Institutions Regulation on Social Activities and that 50% of the exam includes Classroom Administration (MoNE, 2017c).
2. Teacher Strategy Document 2017-2023: The first objective of the document is "to provide the employment of highly qualified, well-educated, and suitable individuals as teachers" (MoNE, 2017b).

Theme: Effect of School Administration in Training Teacher Candidate

The participants describe the teacher candidate -school administration interaction of as roles, preparation and evaluation of the process. According to the participants, the role of school administrators in educating teacher candidates is to be supportive, to define the structure (bureaucracy, legislation), to show practices, to help the teacher candidate adapt to the system, to be an experience transmitter. The fulfillment of roles is related to good communication as the participants stated in the first category. The positive attitude of the teacher candidate towards adapting the process positively affects the interaction. The opinions of the participants are as follows: SA1: *"We have supportive and sharing roles. Besides, we are trying to adapt to the school"*. SA2: *"We are trying to convey our experiences. We are making them practice"*. SA3: *"We provide guidance on implementing directive and applied presentation related to legislation, drawing them into activities that make them feel like they are teachers, and contributing to creating an active participatory field of practice"*. SA4: *"As the school administration, we and the mentor teacher help the teacher candidate develop himself/herself. Of course, the biggest helper is the experience he/she acquire during the time he/she spend in the school"*. SA9: *"...I think we have roles to show and support the functioning of the system"*. SA10: *"...I think the process like e-school and mebbis can also be useful"*.

The participants state that they have fulfilled their preparations for the teacher candidates within the framework of the authority and duties given to them by their superiors. Based on the legislation, they define their preparations as planning and coordinating. Whereas planning is to identify the teacher candidate in terms of how and with whom to work, to introduce and communicate with the mentor teacher, coordination can be defined as demonstrating what the mentor teacher and the teacher candidate do together and expressing the expectations from them. The opinions of the participants related to the subject are as follows: SA2: *"We try to do our best to improve themselves in the framework of legislation and to love the profession"*. SA4: *"We follow the procedure we need to implement. We provide the necessary support related to the desired subject"*. SA5: *"I've arranged my program in order to spend time with the candidate teacher"*. SA7: *"Necessary preparations were made within the program organized in accordance with the schedule"*.

The participants perceive the evaluation process of the teacher candidates as follow up of the procedures originating from the current system. It is understood that there are those who do not support the system as well as those who support it. At the point of evaluation, it is important that the school principal takes part with the teacher candidate in a certain period and that they agree on this situation. Some of the participants also express their suggestions for evaluation. This shows that the process is followed by the participants. The opinions of the participants are as follows: SA1: *"According to the system, the principal and the mentor teacher are doing the evaluation. The process becomes a developer"*. SA4: *"I think the inspector evaluation is unnecessary because he/she gives a parallel note with the school administrator"*. SA5: *"I think it is enough to make the evaluation with a commission including the school principal and the expert teacher. Also, the exam is unnecessary"*. SA6: *"I find the evaluation system positive"*. SA10: *"I think this application is very unnecessary and dysfunctional"*.

According to the observations of the researcher, the school administrator looks at the process and conducts the evaluation based on the legislation as in all transactions. That the participants use such concepts as *"commission, note, inspector and so on"* in their opinions supports the observation. That one of the participants stated that he assigned to a teacher candidate in one of the projects to train him and he explained the experiences in the project to the researcher in detail. That the participant and the teacher candidate share the visuals of the activities and the web pages with these visuals with the researcher show the intense interaction between the teacher candidate and the school administrator. All of the participants personally introduced their schools. They also expressed their wishes to be informed about the results of the research. The attitudes of the participants mentioned that they care about the research and that they want to contribute to the research.

As mentioned in the interviews mentioned below, the presence of the school principal in the evaluation process and the perception of this situation as a positive situation by the participants indicate a parallelism between the interviews and the documents. In addition, the fact that there are many items related to the school administration- teacher candidate interaction in the assignment and relocation regulation support the opinions of the participants who demonstrate their interaction with the teacher candidate. The documents showing the interaction between the teacher candidate and the school administration can be listed as follows (MoNE, 2018):

1. E-Manual for Passing to Constitutive Teacher Exam: One of the members who will be assigned in the oral exam committee is shown as "the director of an educational institution" (MoNE, 2017c).
2. Ministry of National Education Regulation on Teacher Assignment and Relocation: Article 30 expects the superiors, who will fulfill the internship evaluation document of the candidate teacher officers, to follow, supervise, direct and guide the candidate teacher officers on the basis of evaluation (MoNE, 2017a).

Points Added to Research

Considering that there may be situations in the interviews that are not asked in the interview form but which may contribute to the research, a question "Is there anything else you would like to add?" was directed to the participants. While collecting data in qualitative research, it is stated in the relevant literature that there may be situations that are not initially foreseen but may arise in the research process and may contribute to the research and that they can be taken into consideration in the research (Ersoy, 2016; Özcan, 2017). The answers of four participants can be evaluated within this scope. In addition to the system in training the teacher candidate, that four participants are more interested in the details of the subject indicates that the point of view of the school administrator is also important. At the point of development of the teacher candidate, the school administrator has an important place. The school administrator makes efforts for the development of the teacher candidate. The trainings given before starting the profession may also make an important contribution to the teacher candidate process. The opinions of the participants are as follows: SA1: *"Teacher candidate period is the process of gaining experience, the first step should be taken well"*. SA2: *"A teacher who has started working under the Ministry of Education should enter into the class and complete his candidacy as so. If possible, the teacher candidate process should be completed at the university. Person who has started the duty should start as a constitutive teacher"*. SA3: *"I am of the opinion that it is very useful for the internships of university students to be intertwined in school in a period of time and to be together with the university teachers in the education and training in the school"*. SA6: *"I think that it will contribute to the development of the teacher candidates that he/she should participate in the courses of other teachers who have developed themselves in the field of vocational qualification besides the courses of the mentor teacher in the school"*.

Conclusion, Discussion and Recommendations

In the framework of the qualitative research, it is understood that three themes have emerged in the research which was conducted with ten school administrators and was tried to reveal the teacher candidates from the perspective of the school administrator. These are:

1. Thoughts on teacher candidates
2. Effect of environmental factor on teacher candidates
3. Effect of school administration in training teacher candidates

The results obtained from the mentioned themes can be expressed as follows: Although there are professional shortcomings of the teacher candidates, they have the approaches that can be considered as idealistic to the profession. The idealist approach is tried to be put forward through peer learning (through the mentor teacher) by preventing the loss of interest in the profession under the supervision of school administrators. It is understood that organizational socialization is an approach that shows itself in teacher candidate education. However, there are problems in the process of running the teacher candidate process as desired. Balcı (2000) draws attention to the importance of socializing through the work group in order to increase the level of compliance of the employees in the organizations and to prevent the problems that may arise. Similarly, Casey (2005) suggests that the teacher candidates have made efforts to develop the various skills of the students. Bohannon (2015) points out that the teacher candidates are sufficient in terms of effective teaching in terms of knowledge and skills, and emphasizes the importance of increasing knowledge and experience over time as an effective teacher. Langlie (2015) states that the teacher candidates are eager to work, but need support and assistance. In their researches (Düzyol, 2012; Önder, 2018; Öztürk, 2016; Yıldırım, 2012), they demonstrate that

mentor teacher practice in training the teacher candidates contributes positively to the process, and organizational socialization. The results of the research indicated above support the current research result. However, according to the research by Ozer (2013), the teacher candidates believe that they do not have enough support in school. According to the research conducted by Çimen (2010), 17.65% of the school administrators stated that the teacher candidates and the mentor teacher should enter the class together. The studies carried out by Çimen (2010) and Ozer (2013) cannot be said to support the results of the current research. In the observations, it is understood that teacher cndidate practice is basically handled in formal and human dimensions. It is also thought that the obtained answers enable the researcher to acquire enough data for the research. As a result of the research, it can be stated that whereas the professional knowledge, skills, and the opinions based on socialization correspond to the formal dimension of observations, the opinions on support and assistance correspond to the human dimension. The formal dimension of teacher candidate was taken into consideration in the documents, and their importance in the system was tried to be emphasized. The inclusion of studies on teacher candidates in the above-mentioned opinions shows the importance of teacher candidates in the education system.

According to the second result obtained in the research, the interaction of candidate teachers with the environment is evaluated in two groups as internal and external environment. In this way, the basis of evaluation determines the intensity of communication. Whereas the in-school communication defined as the internal environment is at a more intense and desired level, the intensity of communication described as out-of-school is relatively low. However, both the internal and the external environment are cared for by both the teacher candidates and the school administration in the teacher candidate process. Measures should be taken at school in order to realize this importance and to ensure the better and faster adaptation of teacher candidates to the profession. It is understood that the measures are centered on providing an environment in which teacher candidates can demonstrate their real performances. It is seen that the most important concept that school administrators use at this point is "communication". The common and most important finding of the studies (Çakmak, 2011; James, Conolly, Dunning, and Ellott, 2006; Tünay, 2017) is that teacher-environment communication and interaction is an important factor in terms of education. One of the points that school administrators should pay attention to is to implement activities that take the communication with the environment into account. Common objectives should be achieved in interaction with the environment. The research by Casey (2005) indicates empathic thinking, attachment to school, and interaction with environment among the factors affecting the success of the teacher candidates in the profession and reveals that they are as effective as the education they received. Smith-Sherwood (2018) mentions the importance of the interaction between the teacher and the environment. According to the researcher, it is stated that the interaction of the teacher candidates with the environment will have positive reflections on both in-class and out-of-class practices. Myers and Gray (2017) discuss the teacher candidates' success in the profession in terms of their interaction with their colleagues. These points of interaction are considered as getting support, information, facilitating works, and teaching the rules in the school. The teacher candidates can adapt to school through their interaction with their colleagues. Revealing in the researches above that the interaction between school, teacher and environment is the main point in terms of education support the result in this research. According to the data obtained from the observations, it is endeavored to adapt the teacher candidates to the profession and to strengthen this harmony with various activities. Inclusion of teacher candidates in the distribution of tasks in the teachers' room and their participation in the parents' visits support the stated observation. In this way, it is aimed to make the teacher candidates feel themselves valuable and motivated in the system. The teacher's adaptation to the environment and indicating that the activities are necessary in the mentioned research support the observations made. Similarly, in the documents obtained, the establishment of the legal infrastructure for environmental activities supports the teacher-environment interaction. It can be concluded that the documents support the mentioned literature since the teacher candidates consider the environmental interaction necessary.

According to the third result obtained in the research, the training of teacher candidates is related to fulfilment of the roles of the school administration. In addition to the role of the school administrator in promoting the technical side of the profession, it is understood that they have roles to transfer their experiences. Preparations and evaluation process for teacher candidates by the school administrations are carried out through the current structure. It can be stated that school administrators direct their roles in a similar way to the big-small relationship seen in the family. It is understood that the administrators try to act in a manner that prevents the teacher candidates from being distressed and uneasy. In other words, it can be concluded that the administrators are trying to carry out the process in a way that facilitates the work of the teacher candidates without ignoring the technical legislation part. When the literature is analyzed, in the research conducted by Akyol and Kapçak (2017) with the participation of teacher candidates, the teacher candidate-school administrator interaction is reflected as the fact that the school administrators show unifying and integrative behaviors at school. This is naturally reflected in themselves. Zhang, Nishimoto and Liu (2019) reached a similar conclusion. According to

the researchers, the increase in the communication level of the school administrator and teacher candidate shows that the school administrator can perform the expected role better. However, in the research conducted by Ozdas (2018), an different result was reached. The research reveals that school administrators are not interested in teacher candidates sufficiently because of their various and intensive works. According to Pala (2017), candidate teachers think that it would be helpful to work together with the administrators in order to benefit from the knowledge and experience of the school administrators. The research by Çakır (2016) also reveals the importance of school administration in the teacher candidate process. The inclusion of the school administrator in the evaluation process, which is an important stage of candidate teacher, is a practice supported by the teacher candidates. The research mentioned above is thought to support the current research result. However, it is thought that the interaction between the teacher candidate and school administrator is aimed at revealing the formal aspect of the process in research. The current research draws attention to the informal aspect of the process. It is thought that the informal aspect of the process is related to the culture and values of the society.

According to the observations, the participants evaluated the teacher candidate both in terms of legislation and informal communication. Taking both points into account, they have an approach to teacher candidates. In the mentioned studies, the observations emphasized the interaction between the school principal and the teacher candidate, and it is in parallel with the observations involving the formal-informal interaction of the teacher candidate and the school administrator. The observations in the mentioned studies emphasized in terms of the interaction between the school administrator and the teacher candidate are in parallel with the observations involving the formal-informal interaction of the teacher candidate and the school administrator. In addition, the fact that the participants wanted to be informed about the results of the research proves that the answers given by the school administrators are reliable and that the interaction between the teacher candidate and the school administrator is important. In the documents included in the research, the fact that the school administrator includes the arrangements for the participation of the teacher candidate from the candidate to the end of the process shows that the education system attaches importance to the school administrator, teacher candidate, and teacher candidate -school administrator interaction. It is also thought that the conclusions in the mentioned studies indicating that the candidate teacher-school administrator interaction is important support the explanations in the documents put forward.

The following recommendations based on the results can be made for the practitioners: The responsibilities and roles of mentor teachers and school administrators who influence the development of the teacher candidate can be clearly determined through a legislation. Trainings on what can be done can be given to school administrators, mentor teachers, and teacher candidates in order to evaluate their experiences in the process. In this way, the lack of communication between the mentioned groups can be eliminated. The report, which can be formed from the training and experiences, can be presented to the policy makers (MoNE, CHE) to be able to conduct the process more effectively. In terms of researchers, since this research was carried out only with school administrators, another research can be developed by taking the experiences of teacher candidates into account. Because the teacher candidate-school administrator is not directly involved in research, both qualitative and quantitative researches including both school administrators and teachers can be carried out. The research results can be shared with practitioners and researchers on various platforms.

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