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Developing an Orienteering Attitudes Scale: A Validity and Reliability Study

Alaattin ARIKAN[1], Onur GÜLERYÜZ[2], Gökmen GÜNEŞ[3], Turhan ÇETİN[4]

[1]*Faculty of Education, Adnan Menderes University, Aydın, Turkey* *0000-0003-0211-2009*

[2]*Graduate School of Educational Sciences, Gazi University, Turkey* *0000-0002-7771-156X*

[3]*Graduate School of Educational Sciences, Gazi University, Turkey* *0000-0001-8112-8062*

[4]*Department of Social Studies Education, Faculty of Education, Gazi University, Ankara, Turkey* *0000-0002-2229-5255*

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ABSTRACT

Orienteering is an increasingly popular sport activity. Because orienteering is believed to improve cognitive, affective, and behavioural skills, it is used in many classes such as social studies, geography, and physical education. It is, thus, of critical importance to know attitudes towards orienteering, especially among middle school students to use orienteering more effectively and efficiently. This study aimed to develop a reliable and valid scale to measure middle school students' attitudes towards orienteering. To this end, the study sampled 600 students who were attending fifth, sixth, seventh, and eighth grades during the fall term of the 2019-2020 academic year. Expert opinion was sought for the content and face validity of the scale. The results of the exploratory factor analysis (EFA) conducted for the construct validity indicated a three-factor structure consisting of sixteen items, which accounted for 65.06% of the total variance. The factor loadings of the scale items ranged from 0.61 and 0.94. According to the results of the confirmatory factor analysis (CFA), the goodness of fit indices (GFI) were as follows: $\chi 2/df = 2.37$, RMSEA = 0.07, GFI = 0.91, AGFI = 0.88, SRMR = 0.05, RFI = 0.95, CFI =0.97, IFI = 0.97, NFI = 0.96, and NNFI = 0.97. The reliability of the scale was tested using the Cronbach's alpha coefficient, the test-retest reliability coefficient, the significance of the correlation coefficients for the scale and subscales, and the upper and lower 27%. The Cronbach's alpha coefficient was found to be .92 for the total scale, .89 for the affective subscale, .89 for the behavioural subscale, and .72 for the cognitive subscale. Based on the findings, the Orienteering Attitudes Scale is a valid and reliable measure and can be used to measure middle school students' attitudes towards orienteering.

Keywords:
Orienteering, middle school students, scale development, validity, reliability

1. Introduction

Orienteering was first used in military training in Sweden in 1886 and is a sport where people run around an unknown or little-known area to find a number of control points marked on a map in the fastest time with the aid of a map and compass (International Orienteering Federation [IOF], 2018a, 2018b). Orienteering has been done within various institutions in Turkey since the 1970s; efforts for the official organization were initiated in 2001 and the Orienteering Federation was established in 2006 (Türkiye Oryantiring Federasyonu [Turkish Orienteering Federation], 2020). Orienteering requires athletes to combine excellent map reading and total

[1]**Corresponding author's:** Res. Assist., Department of Social Studies Education, Faculty of Education, Aydın Adnan Menderes University, Aydın, Turkey, alaattin.arikan@adu.edu.tr,
[2]Doctoral Student, Graduate School of Educational Sciences, Gazi University, Turkey, guleryuzonr@gmail.com,
[3]Doctoral Student, Graduate School of Educational Sciences, Gazi University, Turkey, gokmengunes40@gmail.com,
[4]Prof. Dr., Department of Social Studies Education, Gazi Faculty of Education, Gazi University, Ankara, Turkey, turhan@gazi.edu.tr,
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concentration skills to choose the optimal route through the start, control points and finish in mountainous, steep and sandy terrain, woods, or parks (Güler, 2009, p. 4). There are four types of orienteering depending on the way it is done. They are foot orienteering, ski orienteering, mountain bike (MTB) orienteering, and trail orienteering (Karaca, 2008, p. 91). Orienteering is not only a game or sport but also an interdisciplinary activity and mental training that can serve to establish a better relationship between human and the environment (Notarnicola et al., 2012). It is a lifelong skill that can be taught to people of all ages in both natural and urban settings. There are many reasons for using orienteering in education: It is fun and safe, requires minimal equipment, provides measurable results, informs students about their abilities and strengths, and encourages group interaction (Hammes, 2007).

Arıkan and Aladağ (2019) reported that orienteering education has a moderate effect on improving the map reading skills of undergraduates. Tanrıkulu (2011) emphasised that orienteering can be used at all levels of education to transform the use of maps and compasses into skills. Atakurt et al. (2017) demonstrated that orienteering education has a positive effect on children's attention and memory level. Tuna and Balcı (2013) found that orienteering increased preservice geography teachers' perceived self-efficacy in map skills by 56%, in fieldwork skills by 66%, and in questioning, interpreting and evaluating skills by 57%. Özcan (2007) concluded that orienteering made a positive contribution to the development of students' social, individual and mathematical-logical intelligence. Avcı (2013) indicated that student views on the practice of orienteering in geography classes were positive. İmamoğlu and İmamoğlu (2018) examined the secondary education curriculum of geography and physical education and sports and suggested that it would be beneficial to prefer orienteering as a classroom activity to help students achieve learning outcomes. Di Tore et al. (2015) suggested that orienteering is a powerful learning resource in the development of spatial skills. Deniz et al. (2011) noted that orienteering develops independent thinking and problem-solving under pressure and stress. Ferguson and Turbyfill (2013) also argued that orienteering promotes better health and fosters critical thinking, problem-solving, and environmental sensitivity. According to Eccles and Arsal (2014), orienteering helps develop quick decision-making skills.

Orienteering activities have become increasingly popular (Gasser, 2018). Orientation is frequently used in out-of-school learning activities. In today's world marked by the increasing importance of distance education due to the ongoing COVID 19 pandemic since 2019, there are many online applications and platforms where orienteering can be played in either single-player or multiplayer mode. Thus, orienteering is also used effectively in distance education. As highlighted in the relevant literature, individuals have fun and learn thanks to orienteering. Additionally, orienteering is believed to improve mental and socials skills, it is frequently used in many classes such as social studies, geography, and physical education. However, the existing body of literature has no instrument that measures middle school students' attitudes towards orienteering. Middle school students are in adolescence during which attitudes begin to develop and take shape (Güllü & Güçlü, 2009). It is, thus, of critical importance to know attitudes towards orienteering, especially among middle school students to use orienteering more effectively and efficiently. Against this background, the purpose of this study was to develop a scale to identify middle school students' attitudes towards orienteering. It is hoped that this study will fill the gap in the literature. This measure can determine students' positive and negative attitudes towards orienteering. It can provide managers with a basis for steps to be taken for orienteering policies. The measure will also be instrumental for researchers who wish to measure attitudes towards orienteering in middle schools.

2. Methodology

2.1. Research Design

The study used an exploratory sequential mixed methods design. According to Creswell (2018), the use of the exploratory sequential mixed design offers many advantages to scale development research and, in this design, the researcher first collects and analyses qualitative data on the research problem and then collects, analyses and interprets quantitative data by building on the findings from the qualitative data. Accordingly, orienteering instructors and officials of the Turkish Orienteering Federation were interviewed. The existing literature was examined, and the scale items were formulated.

2.2. Research Steps

This study aimed to develop a valid and reliable measure to determine middle school students' attitudes towards orienteering. To this end, interviews were held with an administrator who had served at the Turkish Orienteering Federation in Ankara and two orienteering instructors. The literature on orienteering and existing attitude scales for different types of sports were examined.

Based on the interviews and literature search, the researchers created a 35-item item pool including 24 positive items and 11 negative items rated on a 5-point Likert scale ranging from (1) Strongly disagree to (5) Strongly agree. Great care was taken to ensure that the scale items are clear, understandable and suitable for students' level. The items were evaluated by three subject matter experts, a measurement expert, and a Turkish language expert to ensure the content and face validity of the scale. The experts recommended discarding five items and revise two items. Accordingly, five items were discarded, and two items were revised by the researchers. The initial version of the Orienteering Attitudes Scale (OAS) consisted of 30 items.

The OAS was administered to 635 middle school students. Among 635 forms, twenty-three forms were excluded from the dataset because they were not suitable for the data analysis (missing or double-marked items). Additionally, to ensure the normality of the data, twelve outliers were removed from the data set and the normal distribution of the data was achieved. Therefore, the data set consisted of the data of 600 students. Table 1 shows the distribution of the respondents across grade-levels and gender.

Table 1. *Grade Level and Gender of the Respondents*

Grade Level	Gender	f	%
5	Female	61	10.2
	Male	37	6.2
6	Female	41	6.8
	Male	32	5.3
7	Female	95	15.8
	Male	92	15.3
8	Female	134	22.3
	Male	108	18
Total		600	100

The construct validity of the scale was tested using exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA).. Looking at the previous studies that used both EFA and DFA, some studies conducted EFA and CFA on the same sample, some studies conducted EFA and CFA on two different samples by dividing the sample randomly into two sets, and other studies conducted EFA and CFA on different samples randomly selected from the same population for each analysis. Document analysis studies indicated that the literature mostly include studies that conducted EFA and CFA on two different samples by randomly dividing the sample into two sets (Kılıç & Koyuncu, 2017). Fabrigar et al. (1999) suggested splitting the data into two sets and subject one data set to CFA and the other set to EFA when the sample is large enough. In this study, the data were split into two sets and one half was subjected to EFA and the other half to CFA due to temporal and economic reasons. The reliability of the scale was tested using the Cronbach's alpha coefficient, the test-retest reliability coefficient, the significance of the correlation coefficients for the scale and subscales, and the upper and lower 27%. SPSS statistical software version 23.0 was used for EFA, Cronbach's alpha, correlation test, independent samples t-test, and descriptive statistics. Lisrel statistical software version 8.80 was used for CFA.

3. Findings

The data were checked for suitability to perform EFA on the OAS developed within the scope of the study. For this purpose, outliers, missing data, the normality of the dataset, and the suitability of the sample were taken into account (Büyüköztürk, 2007; Tabachnick & Fidell, 2013). Frequency analysis was carried out and no missing data was found. The negative items 2, 5, 7, 10, 16, 17, 22, 29 and 30 were reversed. The normality of the data was tested using the Kolmogorov-Smirnov test ($p>.05$); histograms, mode, median, and arithmetic mean were examined; skewness and kurtosis coefficients (-1.5 to +1.5) were taken into account (Tabachnick &

Fidell, 2013). The data found to be outliers based on the analysis results were deleted from the dataset and the normal distribution was achieved.

3.1. Findings on Validity of the Scale

Exploratory and confirmatory factor analyses were performed consecutively to test the validity of the OAS.

3.2. Exploratory Factor Analysis

After the data were made suitable for factor analysis, the suitability of the data for EFA was tested using the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity. The KMO value was found to be .93 and the results of Bartlett's test of sphericity were significant ($\chi 2 = 4396.466$ df = 435, $p < .00$). A KMO value should be greater than .60 and Bartlett's test of sphericity should be significant to conduct a factor analysis (Field, 2013). The results showed that the data were suitable for factor analysis.

Promax rotation was used because there were intercorrelations above .30 (Brown, 2009). According to the results of the initial factor analysis, 30 items were subsumed under a single factor. Factor loadings should be above .40 (Tabachnick & Fidell, 2013). Thus, the condition that factor loadings should be above .40 and differences between the factor loadings should be .20 and above was considered during the analysis. Items that fail to meet the condition were deleted from the scale. As a result, a three-factor structure emerged. In the scree plot for the number of factors that stemmed from the scale, the inflexion point also indicated three factors.

The total variance explained by the three-factor scale was found to be 65.06%. The percentage of the explained variance is indicative of the strength of the factor structure. Tavşancıl (2010) noted that a total variance between 40% and 60% is sufficient for social sciences. Table 2 demonstrates the results of the factor analysis of the scale.

Table 2. *Factor Analysis Results for the Orienteering Attitudes Scale*

		Factors					
EN	NN	Affective	Behavioural	Cognitive	Anti-image Correlation Coefficient	$\bar{X}$	SD
12	1	.85			0.91	4.07	1.13
13	2	.84			0.91	3.67	1.24
9	3	.73			0.91	4.06	1.02
14	4	.70			0.95	3.82	1.16
8	5	.70			0.89	4.07	1.03
15	6	.68			0.94	4.10	1.09
6	7	.66			0.92	3.39	1.20
24	8		.87		0.91	3.63	1.31
26	9		.89		0.92	3.37	1.34
28	10		.76		0.94	3.79	1.23
27	11		.72		0.92	3.14	1.36
23	12		.71		0.95	3.59	1.25
25	13		.61		0.94	3.88	1.22
30	14			.94	0.84	4.68	0.90
3	15			.65	0.90	4.42	1.00
5	16			.63	0.88	4.38	1.02
Eigenvalues		7.37	1.85	1.18			
% of Variance		46.09	11.57	7.35			
% of Total Variance		46.09	57.66	65.01			
KMO		.92					
χ^2		2666.937					
p		.000					

As seen in the table above, seven items (items 6, 8, 9, 12, 13, 14, and 15) were subsumed under the affective subscale, six items (items 23, 24, 25, 26, 27, and 28) were subsumed under the behavioural subscale, and three items (items 3, 5, and 30) were subsumed under the cognitive subscale. The factor loadings of the scale items ranged from 0.61 and 0.94. These results showed that the scale has a satisfactory level of construct validity.

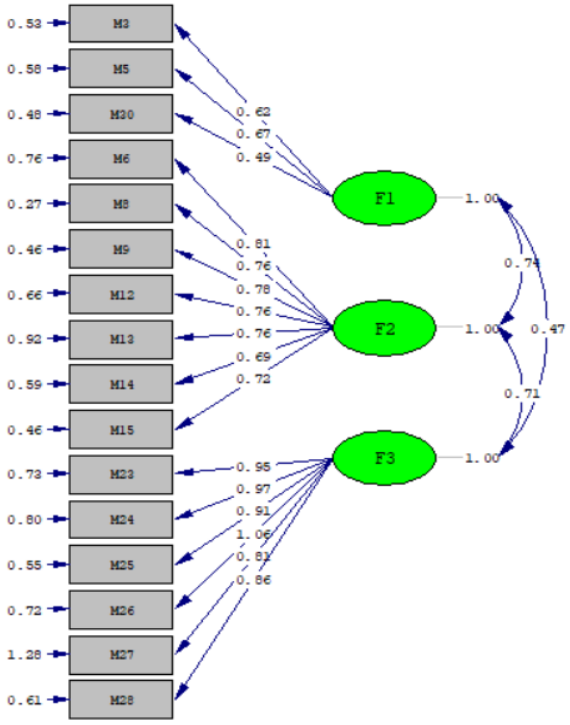
3.3. Confirmatory Factor Analysis

The goodness of fit of the emerging structure was analysed using CFA and the value of $\chi 2$/df and the goodness of fit indices were computed. Table 3 displays the standard goodness of fit criteria and the goodness of fit indices for the model.

As it is clear from the goodness of fit indices in the table above, the model has "perfect fit" or "acceptable fit" values. Given the reference values, the model has an acceptable fit. (Schermelleh-Engel & Moosbrugger, 2003; Schumacker & Lomax, 2004; Kline, 2005; Seçer, 2015).

Table 3. *Standard Goodness of Fit Criteria and Goodness of Fit Indices*

Tested Goodness of Fit Indices	Perfect Fit Range	Acceptable Fit Range	Computed Fit Values	Conclusion
$\chi 2$	-	-	238.95	-
Df	-	-	101	-
$\chi 2$/df	$0 \leq \chi 2/df \leq 2$	$2 \leq \chi 2/df \leq 3$	2.37	Acceptable Fit
RMSEA	.00 ≤ RMSEA ≤ .05	.05 ≤ RMSEA ≤ .08	.07	Acceptable Fit
GFI	.95 ≤ GFI ≤ 1.00	.90 ≤ GFI ≤ .95	.91	Acceptable Fit
AGFI	.90 ≤ AGFI ≤ 1.00	.85 ≤ AGFI ≤ .90	.88	Acceptable Fit
RMR	.00 ≤ RMR ≤ .05	.05 ≤ RMR ≤ .08	.06	Acceptable Fit
SRMR	.00 ≤ SRMR ≤ .05	.05 ≤ SRMR ≤ .10	.05	Acceptable Fit
RFI	.90 ≤ RFI ≤ 1.00	.85 ≤ RFI ≤ .90	.95	Perfect Fit
CFI	.97 ≤ CFI ≤ 1.00	.95 ≤ CFI ≤ .97	.97	Perfect Fit
IFI	.95 ≤ IFI ≤ 1.00	.90 ≤ IFI ≤ .95	.97	Perfect Fit
NFI	.95 ≤ NFI ≤ 1.00	.90 ≤ NFI ≤ .95	.96	Perfect Fit
NNFI	.97 ≤ NNFI ≤ 1.00	.95 ≤ NNFI ≤ .97	.97	Acceptable Fit
PNFI	.95 ≤ PNFI ≤ 1.00	.50 ≤ PNFI ≤ .95	.81	Acceptable Fit
PGFI	.95 ≤ PGFI ≤ 1.00	.50 ≤ PGFI ≤ .95	.81	Acceptable Fit



F1: cognitive subscale, F2: affective subscale, and F3: behavioural subscale

Figure 1. *Path diagram obtained from the CFA*

As shown in Figure 1, the item factor loadings ranged from 0.49 to 1.06. The t values of the items were examined to determine whether the standardized values are significant. The t values of the scale items ranged from 9.34 to 16.97. According to Çokluk et al. (2016), a t value above 2.56 indicates that it is significant at .01.

For all items, t values were significant at $p < .01$. These results indicate the three-factor OAS consisting of sixteen items has an acceptable fit and is applicable.

3.4. Findings on the Reliability of the Scale

After EFA and CFA, the reliability of the scale was tested using the Cronbach's alpha coefficient, the test-retest reliability coefficient, the significance of the correlation coefficients for the scale and subscales, and the upper and lower 27%. To determine the internal consistency of the scale items, the Cronbach's alpha coefficients were computed for the total scale and subscales. Table 4 shows the results.

Table 4. *Internal Consistency Coefficients of the Scale*

Item No	Subscales	Items	Cronbach's Alpha
12	Affective	I would like to take an orienteering course.	.89
13		I would like to go to orienteering activities wherever they are.	
9		I enjoy orienteering.	
14		I am interested in orienteering equipment.	
8		I like orienteering.	
15		Orienteering activities attract my attention.	
6		Orienteering is indispensable to me.	
24	Behavioural	I introduce orienteering to people around me.	.89
26		I read about orienteering.	
28		I listen to orienteering issues eagerly.	
27		I spend on orienteering equipment.	
23		I watch orienteering competitions attentively.	
25		I recommend orienteering to my friends.	
30	Cognitive	I would ban orienteering if I could.	.72
3		Orienteering needs to be popularized.	
5		I think orienteering is a boring activity.	
		Total	.92

The Cronbach's alpha coefficient was found to be .92 for the total scale, .89 for the affective subscale, .89 for the behavioural subscale, and .72 for the cognitive subscale. Table 5 presents the independent samples t-test results for the upper and lower groups.

Table 5. *Independent Samples t-Test Results for the Upper and Lower Groups*

ItemNo	Groups	N	$\bar{X}$	SD	df	t	p
12	Upper	81	4.91	0.32	91.48	14.41	0.00
	Lower	81	2.91	1.21			0.00
13	Upper	81	4.74	0.57	116.36	14.63	0.00
	Lower	81	2.65	1.15			0.00
9	Upper	81	4.84	0.40	105.23	14.97	0.00
	Lower	81	3.05	1.00			0.00
14	Upper	81	4.72	0.55	114.61	13.84	0.00
	Lower	81	2.74	1.16			0.00
8	Upper	81	4.88	0.40	102.74	15.25	0.00
	Lower	81	2.98	1.05			0.00
15	Upper	81	4.88	0.51	111.65	14.16	0.00
	Lower	81	2.94	1.12			0.00
6	Upper	81	4.52	0.78	141.87	12.82	0.00
	Lower	81	2.57	1.13			0.00
24	Upper	81	4.64	0.62	119.52	13.79	0.00
	Lower	81	2.57	1.20			0.00
26	Upper	81	4.33	0.96	154.67	11.43	0.00
	Lower	81	2.42	1.16			0.00
28	Upper	81	4.81	0.45	103.50	15.52	0.00
	Lower	81	2.67	1.16			0.00
27	Upper	81	4.33	0.96	160	13.25	0.00
	Lower	81	2.15	1.13			0.00
23	Upper	81	4.67	0.69	139.36	15.02	0.00

	Lower	81	2.59	1.03			0.00
25	Upper	81	4.80	0.51	113.71	16.11	0.00
	Lower	81	2.65	1.09			0.00
30	Upper	81	4.99	0.11	81.28	5.88	0.00
	Lower	81	4.17	1.24			0.00
3	Upper	81	4.94	0.24	85.95	9.65	0.00
	Lower	81	3.57	1.25			0.00
5	Upper	81	4.90	0.49	110.20	9.18	0.00
	Lower	81	3.67	1.11			0.00

Another method for determining the internal consistency of the items is examining the significance of the difference between the mean scores of the upper and lower 27% of the sample. According to the results of the independent samples t-test for the upper and lower 27%, there was a significant difference between the groups for all scale items. To prove the internal consistency of the scale, the significance of the intercorrelations among the subscales and correlations between the total scale and subscales was also analysed. Table 6 shows the correlation values for the total OAS and subscales.

Table 6. *Correlation Values for the Total Scale and Subscales*

	Total Scale	Affective	Behavioural
Affective	.92	-	
Behavioural	.88	.66	-
Cognitive	.61	.53	.34

As seen in Table 6 is examined, the correlation values ranged from 0.34 to 0.92, indicating a positive correlation at the significance level of $p < 0.05$.

The stability of the scale was tested using the test-retest reliability method. To this end, the scale was administered to 52 students at three-week intervals. Table 7 presents the test-retest reliability coefficients.

Table 7. *Test-Retest Reliability Coefficients for the Total Scale and Subscales*

OAS		Affective	Behavioural	Cognitive	Total
Affective	r	.653			
	p	0.00			
	n	52			
Behavioural	r		767		
	p		0.00		
	n		52		
Cognitive	r			.644	
	p			0.00	
	n			52	
Total	r				.989
	p				0.00
	n				52

As seen in Table 7, the test-retest reliability coefficient was found to be 0.65 for the affective subscale, 0.77 for the behavioural subscale, 0.64 for the cognitive subscale, and 0.99 for the total scale. A measure with reliability coefficients .70 and higher is considered reliable (Fraenkel et al., 2012).

Given the significance of the t values for the between-group differences, the Cronbach's alpha coefficients, the intercorrelations of the factors, and the test-retest coefficients, it is safe to say that the items are discriminating, and the OAS is reliable (Büyüköztürk, 2007; Erkuş, 2012).

Considering the results of the validity and reliability analysis together, the OAS is a valid and reliable measure to determine middle school students' attitudes towards orienteering. The highest score attainable on the OAS is 80 and the lowest score is 16. The highest score attainable on the affective subscale is 35 and the lowest is 7. The highest score attainable on the behavioural subscale is 30 and the lowest is 6. The highest score attainable

on the cognitive subscale is 15 and the lowest it 3. An individual's overall attitude towards orienteering can be determined by looking at the total score on the scale or each subscale can be evaluated separately.

4. Conclusion and Discussion

This study set out to develop a valid and reliable scale to measure attitudes towards orienteering. While developing the Orienteering Attitudes Scale (OAS), the three-factor structure including affective, behavioural, and cognitive was taken into consideration in keeping with the nature of attitude. Based on the literature search and the interviews with an orienteering administrator and two orienteering instructors, a 35-item item pool was created including 24 positive items and 11 negative items rated on a 5-point Likert scale ranging from (1) Strongly disagree to (5) Strongly agree. The scale items were evaluated by three subject matter experts, a measurement expert, and a Turkish language expert to ensure the content and face validity of the scale. The experts recommended discarding five items and revise two items. Accordingly, five items were discarded, and two items were revised by the researchers. The initial version of the Orienteering Attitudes Scale (OAS) consisted of 30 items.

The OAS was administered to 635 middle school students. Among 635 forms, twenty-three forms were excluded from the dataset because they were not suitable for the data analysis (missing or double-marked items). Additionally, to ensure the normality of the data, twelve outliers were removed from the data set and the normal distribution of the data was achieved. The final dataset contained the data of 600 students. EFA and CFA were used to test the construct validity of the OAS. The data collected from 600 respondents were split into two sets. One half was subjected to EFA and the other half to CFA. The results of the EFA indicated a three-factor structure consisting of sixteen items, which accounted for 65.06% of the total variance. The factors were named affective, behavioural, and cognitive. Then, a CFA was performed to see whether the model is verified. The results of the CFA showed that the three-factor structure of the OAS had adequate goodness of fit indices.

The percentage of the explained variance is indicative of the strength of the factor structure. Tavşancıl (2010) noted that a total variance between 40% and 60% is sufficient for social sciences. The factor loadings of the scale items ranged from 0.61 and 0.94. Considering that the goodness of fit indices computed through the CFA were within the range of perfect and acceptable fit, the construct validity of the OAS was established.

The reliability of the scale was tested using the Cronbach's alpha coefficient, the test-retest reliability coefficient, the significance of the correlation coefficients for the scale and subscales, and the upper and lower 27%. The Cronbach's alpha coefficient was found to be .92 for the total scale, .89 for the affective subscale, .89 for the behavioural subscale, and .72 for the cognitive subscale. The results of the independent samples t-test for the upper and lower 27% showed a significant difference between the groups for all scale items. These findings indicate that all items of the OAS are highly discriminating. Concerning the intercorrelations among the subscales and the correlations between the total scale and subscales, the correlation values ranged from 0.34 to 0.92, indicating a positive correlation at the significance level of $p< 0.05$. The test-retest results showed a high correlation for the subscales and a very high correlation for the total scale. Given the significance of the t values for the between-group differences, the Cronbach's alpha coefficients, and the intercorrelations of the factors, it is safe to say that the items are discriminating, and the OAS is reliable (Büyüköztürk, 2007; Erkuş, 2012).

Attitudes have three components. The central component is the affective component generated by relatively continuous positive or negative feelings related to an object. The cognitive component forms beliefs about an attitude object. The behavioural component involves acting in a manner consistent with feelings and beliefs (Morgan, 2011). As a result of the analysis, the OAS emerged as having three factors including affective, behavioural, and cognitive. The literature includes studies on the effects of orienteering on individuals'' cognitive, affective and behavioural development. Looking at the studies investigating the effect of orienteering on cognitive development, Arıkan and Aladağ (2019) stated that orienteering has a moderate effect on improving the map reading skills of undergraduates. Atakurt et al. (2017) showed that orienteering education has a positive effect on children's attention and memory level. Özcan (2007) found that orienteering positively contributes to the development of students' social, individual and mathematical-logical intelligence. İmamoğlu and İmamoğlu (2018) investigated the secondary education curriculum of geography and physical education and sports and recommended that it would be beneficial to use orienteering as a classroom activity

to help students achieve learning outcomes. Peke (2020) reported that orienteering increases individuals' levels of mental endurance. Tuna and Balcı (2013) concluded that orienteering promotes preservice geography teachers' self-efficacy perceptions. Yılmaz and Dellal (2020) reported that students paid more attention to artefacts and learned how to use maps during the orienteering activities held at a museum. Kobayashi (2019) argued that orienteering is important for geography education. Cataldi et al. (2021) reported that orientation improves visual-spatial working memory. Notarnicola et al. (2012) noted that orienteering strengthens memory. Zagorodnikova and Guseva (2020) argued that orienteering improves especially attention control and memorisation skills.

Looking at the studies investigating the effect of orienteering on affective development, Peke (2020) reported that orienteering fosters individuals' commitment to sports. Additionally, Yılmaz and Dellal (2020) concluded that students enjoyed the orienteering activities held at the museum. Avcı (2013) also indicated that student had positive views on the practice of orienteering in geography classes. Looking at the studies investigating the effect of orienteering on behavioural development, Aksın (2008) noted that orienteering has positive effects on mental and physical development. Likewise, Deniz et al. (2011) stated that orienteering helps players have high coordination and stay healthy. Karaca and Gündüz (2021) also argued that systematic and purposeful mental training can positively contribute to the performances of orienteers. Additionally, Pouya et al. (2017) asserted that orienteering can provide cognitive, affective and behavioural contributions.

Taken together, the results of the validity and reliability analysis demonstrate that the OAS can be used as a valid and reliable measure to identify middle school students' attitudes towards orienteering.

As a result of the search for the literature, no scale has been found to measure attitudes towards orienteering. This study makes a major contribution to the current literature by filling this gap and promoting the more effective and efficient use of orienteering. The scale developed in this study was subjected to multiple validity and reliability analyses and evidence was presented. In this regard, the construct validity was tested through EFA and CFA, and the reliability was tested using the Cronbach's alpha coefficient, correlation coefficients, and the upper and lower 27%. The test-retest reliability method was also used.

5. Limitations and Recommendations

The major limitation of this study is the fact that it sampled only fifth-to-eighth-grade students. Thus, it would be useful to repeat validity and reliability analyses using data from different sample groups. Further research may carry out a correlational survey to investigate the relationship between orienteering and some variables such as self-efficacy perceptions, academic achievement, school attitudes, and motivation.

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Investigating University Students' Perceptions About Two Different Cases of Foreign Language Courses

Elif İLHAN[1], Ceyda ZERENAY[2]

[1]*Rectorate, Ankara Hacı Bayram Veli University, Ankara, Turkey* *0000-0002-8536-1571*

[2]*School of Foreign Languages, Ahi Evran University, Kırşehir, Turkey* *0000-0002-8437-1372*

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ABSTRACT

This study investigates university students' perceptions of two different cases of foreign language courses conducted in L1&L2 and in only L2. This qualitative study was conducted as a multiple case study. The data were obtained via a a semi structured form and analysed through content analysis. The study mainly revealed the students had overwhelmingly positive feelings about the courses in only L2 as in the second case. They explained some (dis)advantages about both cases of the courses in terms of efficiency, contribution to their vocabulary/grammar knowledge and listening /speaking skills. The frequency levels of both advantages and disadvantages regarding both cases stated by the students were so close. Based on the findings, it can be suggested that a student-teacher driven policy should be implemented to assist the process in using L1 appropriately and necessarily based on the students' perceptions and preferences.

Keywords:
Foreign language teaching, multiple case study, language teaching in higher education, L1 use, L2 use, target language use.

1. Introduction

Individuals are always expected to communicate efficiently in at least one foreign language in academic, social and professional contexts. The expectation has led to an increasing interest in learning foreign languages. Dating back to the early 20th century, various approaches/methods such as Direct, Grammar Translation, Audiolingual, Desuggestopedia, Communicative Language Learning, and Task-Based Language Teaching build upon each other in the foreign language learning/teaching field. With every new approach/method, the field has shifted, and each new touch highlighted different aspects of learning and teaching. The traditional approaches/methods alternated between dichotomies such as instruction- intervention, theory-practice, competence- performance, form- meaning, accuracy- fluency etc. One of these dichotomies is about target language (L2) versus native language (L1) use, which is also called as intralingual versus cross-lingual use by Stern (1992) in foreign language teaching/learning,

Throughout the time, the approaches and methods like Grammar Translation Method, Audiolingual Method, Desuggestopedia and Communicative Language Learning accept the use of L1 while others such as Direct, Natural or Task-Based Language Teaching do not in favour of using L1 but encourage using only L2. Yet, a third group emphasizes time and amount of L1 use in foreign language courses, namely the post method pedagogy. This pedagogy which discusses the issues in a broader perspective in the field, with its particularity, practicality and possibility parameters, emphasizes teachers' awareness by constructing the principles and procedures of their particular classrooms based on their experiential knowledge rather than prescribed principles and techniques (Kumaravadivelu, 2006). According to these parameters, foreign language

[1]Corresponding author's address: Ankara Hacı Bayram Veli University, Rectorate, Ankara, Turkey
e-mail: elif.ilhan00@hbv.edu.tr
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education has been affected by political, historical,sociocultural experiences,classroom strategies, objectives and materials. For that reason, it has been suggested that the amount and the best time for using L1 depend on teachers' practices in their particular contexts (Kumaravadivelu, 2006).

As the differentiations among the approaches/methods show clearly, the use of L1 in foreign language courses has been (among the) controversial issues in foreign language education. Some researchers promote the extensive use of L2 for different reasons. For instance, students who want to improve L2 proficiency need to encounter as much amount of target language input as possible because L1 usage may retain students of this significant input (Ellis, 2002; Peregoy & Boyle, 2005). Accordingly, these researchers probably believe that students will never acquire the target language properly if they do not use it in class. Some researchers (e.g., Cianflone, 2009; Gass, 1996; Littlewood & Yu, 2011) believe that using L1 does not enhance learners' cognition but may lead to inappropriate transfer from the first language to the target language. For instance, the students adopt the rules and word order of their native language and transfer them to the new language that they have just learned. Consequently, this leads to a delay in learning the new language (Gass, 1996).

On the other hand, the criticism over L1 use seems to be diminishing and even slowly L1 use in language classes gaining a significant role in the settings of foreign language teaching (Cianflone, 2009; Kim & Elder, 2008; Nation, 2003). Because of its important role in learners' psychological and cultural constructions, it is deduced that L1 should not be subordinated to any other language and should not be completely abandoned (Burden, 2000) and that L1 should be used in situations such as giving instructions, eliciting asking questions about language and teaching grammar, encourage them to use it correctly (Atkinson, 1987).Additionally, Piasecka (1988) proposes other possible uses of L1 in the process of discussion on cross-cultural issues, language analysis, classroom management, explanation of errors, scene-setting. As Cook (2010) asserts, putting a ban on the use of L1 disproves 'the pedagogical principle of moving from known to unknown' (as cited in Larsen-Freeman & Anderson, 2013, p. 5).

It is evident from all explanations above that L1 has a place in the foreign language learning/teaching process, but the danger of using excessive amounts of L1 should be considered. Atkinson (1993) suggests that it is more convenient or easier to use L1, however, the teachers should know that it can become a routine and for teachers and student L1 can become the main language. Such overuse of L1 in foreign language courses can result in problems such as difficulty in understanding even the simplest subjects without translation and even in communicative tasks feeling the comfort of using L1. Moreover, they may ignore the outstanding role of target language in the activities (Atkinson, 1987). As Turnbull (2001) states maximizing the target language use does not and should not mean that it is detrimental for instructors and learners to use L1. It is crucial that L1 should not be used randomly, especially by the teachers and also, it should not be seen as an excuse for the deficiencies (Franklin, 1990). Moreover, in some situations like trying to explain the meaning of a language item, L1 use can be time-saving (Burden, 2001; Cook, 2010; Levine, 2011; Lo, 2015; Macaro, 2009; Schweers, 1999), can serve as contentment and a tool in order to exhibit linguistic differences between L1 and L2 (Cole, 1998). Moreover, students are able to attend distinctive features of the native language they should be acquainted (Butzkamm, 1998; Cole, 1998). Besides, using both languages help students be aware of the language learning process while they are comparing and contrasting the meaning and forms of these two languages (Butzkamm, 2003; Weschler, 1997).

As Celik (2008) concludes L1 use in FLCs has been traditionally dejected; nevertheless, many teachers/researchers have recognized that to learn a foreign language, using one's own language is reasonably necessary, efficient and natural in practice. The disagreement and inconclusiveness between theory and practice and even between approaches/methods show the need to analyze the practices and come to a conclusion. Moreover, the disagreement about whether to use only L2 or a moderate amount of L1 along with L2, and about how much and when to use L1 in the learning process, has added importance to the research on L1 use in FLCs. In that process, determining learners' views, feelings, and expectations can be a starting point. However, it can be claimed that they are underestimated especially in higher education contexts, while the literature often strongly suggests students' perceptions and expectations should be considered by the stakeholders who are directly or indirectly in touch with them during their education (Harmer, 2001). Moreover, there are some studies on students' and teachers' attitudes towards L1 use in L2 instruction in different language contexts, namely English (Gabrielatos, 2001; Polio & Duff, 1994), Spanish (Schweers, 1999),

Arabic (Biçer, 2017; Kurt & Kurt, 2015), Chinese (Littlewood & Yu, 2011), Russian (Oksuz, 2014) and Turkish (Kayaoğlu, 2012; Sarıçoban, 2010), but these studies mainly focus on primary and secondary level. However, quite a few studies focus on the issue on higher education level (Al Sharaeai, 2012; Polio & Duff, 1994), especially in Turkish context (Ekmekci, 2018; Oflaz, 2009; Paker & Karaağaç, 2015). Schweers (1999) concludes that the lack of studies conducted in different contexts (i.e., the higher education context in our study) and the consideration of different variables (i.e., students' perceptions in our study) when examining the phenomenon seem to be a weakness in the relevant context in our study) and considering different variables (i.e., undergraduate students' perceptions in our study) when studying the phenomenon seem to be a weakness of the related literature, which needs special attention. Therefore, the present study aiming to investigate university students' perceptions about two different cases of foreign language courses conducted in L1&L2 and in only L2 has great importance in an attempt to get advance research in the field and fill the gap in higher education context in order to dismiss the pre-mentioned disunity and inconclusiveness among the stakeholders. That study also carries importance for the stakeholders as mentioned earlier like curriculum developers, educational administrative staff, instructors at higher education institutions to develop a curriculum of both foreign language courses and other courses at bilingual education institutions.

All in all, this study aims to investigate university students' perceptions about two different cases of foreign language courses conducted in L1&L2 and only L2. To this end, the university students' feelings/views/preferences about both cases of foreign language courses were found out.

2. Methodology

2.1. Research Design

The study on university students' perceptions about two different cases of foreign language courses conducted in L1&L2 and the only L2 was designed as a case study with a qualitative approach. In case studies, a researcher explores a bounded system (a case) or multiple bounded systems (cases) over time (Cresswell, 2013, 73). In the present study, there are two cases to be explored: the courses conducted in L1 & L2 (as the first case) and the courses conducted in only L2 (as the second one). Therefore, it is a multiple-case study design, which presents more variability to be discovered, more relationships to be compared, and more opportunities for generalizations and a testable theory to be developed (Eisenhart & Graebner, 2007). The current multiple-case study design allowed comparisons between cases and the researcher to explore existing and new data in the form of interviews (Yin, 2003). As Yin (2003) indicates, comparative case studies are multiple experiments and not instances of multiple subjects across a single experiment. The comparisons are structured between cases to understand the differences and the similarities between the cases (Baxter & Jack, 2008; Stake, 1995) as in the current study comparing two cases of foreign language courses. The cases may be viewed as a replication of the phenomenon, similar to experiments in quantitative undertaking (Campbell, 2009). In the present study, the cases were selected as a theoretical replication of native language use in foreign language classes, and the cases were designed to cover different theoretical conditions (in the first case, L1 should be used and in the second case, L1 should not be allowed in foreign language classes) (Yin, 2003).

2.2. Setting and Participants

The study was conducted in Foreign Language Courses (FLCs) - a two-hour course per week in both terms of the 2018-2019 academic year. The courses are included in the curricula of all departments of higher education institutions as must courses and presented in the first academic year of undergraduate education in Turkey. The main aim of these courses is to get basic foreign language skills to undergraduate students so that they can utilize from books, researches, and other developments in their field (Unal & Özdemir, 2008). For that reason, the participants were determined as the first-grade students at three different departments, namely Math, Turkish Language, and Social Sciences Teaching of an educational faculty of a public university in Turkey via convenience sampling method which meets the easy accessibility criteria (Patton, 1999). From these departments, 90 first grade students attended the study voluntarily. There were 52 female and 38 male students. Nearly all of them have started learning foreign language simultaneously and taken nearly the same amount of foreign language courses because of the centred curriculum in the Turkish education system. None of them attended preparatory class education prior to their undergraduate education at the faculty and only five of them indicated they attended private language courses, which all show their educational backgrounds

in terms of foreign language learning are quite similar. The students were also unsuccessful in the proficiency exam made at the beginning of the term, which can be interpreted as having the most A1 level of English proficiency. *The Stance of the Researchers:* The researchers have been working as instructors of English for more than ten years. One of the researchers is carrying out her PhD in English language teaching. The other researcher has a PhD degree in curriculum and instruction.

2.3. Data Collection and Analysis

The data were collected via interviewing method using a semi-structured interview form developed by the researchers. In developing the form, after a literature review process, a preliminary list of questions was prepared. Then the questions were consulted for the views of two academicians who have experience in foreign language teaching and qualitative research. Also, another instructor with twenty-year foreign language teaching experience was also asked to discuss the questions. Based on those interviews, two questions to have a similar focus and cause almost identical answers, were re-expressed as only one question. The order of the questions was also changed based on the suggestions of the expert in the field of qualitative research. All in all, the interview form was created with the impression of these interviews and the support of the literature. The form included five questions related to students' feelings about the two cases of FLCs, advantages and disadvantages of these courses besides demographic questions.

One researcher was the responsible instructor for the courses, so the other researcher conducted the interviews. For the first case, in the fall term, the students had FLCs conducted in L1&L2. Upon the term, the researcher conducted focus group interviews with most of the students studying math and Turkish language teaching departments and got some written responses to the form from the students studying Social Sciences department because of their final exam schedules. The focus group interviews were conducted with a group of five to seven students lasting 30-45 minutes and completed in about 15 days so that the first case was explored in detail.

For the spring term of the same academic year, in the second case of FLCs, structured as the theoretical replication of the case (Yin, 2003), the same researcher was the responsible instructor for the course, and she used only target language in and out of the courses. She asked and answered all the questions, made all explanations in L2, and did not utter one word in the students' native language under any circumstances. When the spring term was over, the other researcher interviewed all the students in groups with the same interview form. The focus group interviews were conducted with a group of five to seven students lasting 30-45 minutes. That process lasting about 20 days enabled the researchers to explore the second case deeply.

After the data collection was completed, each entry was coded by labelling the students with their departments, numbers, and genders as 'M1F' (M stands for mathematics, S for social sciences, and T for Turkish language department, and F for female and M for male students) to keep the identity of the students confidential and stored.The data were analysed through the content analysis method. In this qualitative data analysis process, first, verbatim transcriptions of the interviews were made. Texts were examined in detail and codes and themes were then determined by reading and re-reading the data (Rice & Ezzy, 1999, p.258). Codes and themes were pointed out in relation to each other, and results were inferred based on the study's aim and supported with the participants' views via direct quotations.

2.4. The Validity and Reliability of the Research

Applying some strategies in the study, the validity and reliability of the research can be increased (Creswell, 2013). The researchers followed the process closely for two terms; One of the researchers spent a great deal of time during cases with students in courses. The other researcher carried out the interviews to make students feel free and open to share their proper feelings/views to ensure the accuracy of data and findings during the process. All data were recorded and filed on time. In order to ensure the credibility and transferability of the semi-structured interview forms, the opinions of three different experts were obtained - one of them was in the field of English teaching, another was in the field of education, and the last was an experienced language teacher with a master's degree in foreign language teaching.For this study, data collection and analysis processes were given in detail and direct quotations were used while explaining the findings. To ensure confirmability, 20 % of the data were firstly coded by two researchers separately. Then, in a meeting with the focus of inter-coder reliability, it was determined the variation of codes and themes determined by the

researchers was minor and a consensus was reached. After that, the rest of the data were coded by the researchers separately. When the coding process was over, inter-coder reliability was calculated with Miles and Huberman's (2015) reliability formula ([number of agreements/ (number of agreements + disagreements)] X 100) comparing researchers' coding keys. The current study calculated as 92/ (92 +6) X 100 = 93% thanks to the meeting made after the analysis of 20 % of the data. Additionally, all data was stored to maintain confirmability.

3. Findings

3.1. The feelings of the students about the courses carried out in L1&L2 and only L2

The students' feelings about the courses carried out in L1&L2 and only L2 were presented comparatively in Table 1.

Table 1. *The Feelings of the Students about the Courses Carried out in L1&L2 and Only L2*

The feelings of the students about the courses carried out in				
	both L1 and L2		only L2	
Theme	Codes	f	Codes	f
Positive Feelings	Relaxed	26	Motivated	36
	Motivated	16	Enjoyed	28
	Satisfied	9	Satisfied	25
	Enjoyed	8	Willing to participate in courses	17
	Appealed	5	Appealed	16
	Being fearless	4	Self-confident	13
	Willing to participate in courses	3	Like	10
	Concentrated	3	--	
	Sub-total	74	Sub-total	145
Negative Feelings	Unwilling to participate in courses	25	Anxious	11
	Bored	12	Distracted	11
	Uninterested	10	Unwilling to speak in courses	10
	Dissatisfied	6	Nervous	10
	--		Bored	6
	--		Unwilling to participate in courses	6
	--		Stressed	4
	--		Worried about being humiliated	2
	--		Fearful	2
	--		Feeling insufficient	2
	--		Dislike	1
	Sub-total	53	Sub-total	65
Changing Feelings	--		Fearful at first	6
	--		Anxious at first	5
			Confused at first	5
	--		Stressful at first	3
	--		Sub-total	19
	Total	127	Total	229

Table 1 shows the students indicated a lot more things about the courses conducted in the only L2. The domination of positive feelings is a sign of the students' interest in only L2 courses. It can be easily seen that the students mostly expressed positive feelings about both versions of the course focusing on mainly similar feelings like *motivated, willing to participate in courses, appealed, satisfied, ... etc.* On the other hand, they explained they felt *relaxed* and *motivated* in the courses carried out in L1 & L2.

> *"I listened to the lesson without getting bored because I was trying to understand. I had trouble expressing it, but I think this triggers learning more."* M2F

> *"I listened to the lesson without getting bored because I was trying to understand."* M5F

The students explained many different feelings about the courses conducted in only L2 in terms of negative feelings. In such courses, they felt *anxious, distracted, unwilling to speak in courses and nervous* while in the courses conducted using both L1 & L2, they felt *unwilling to participate in courses, bored and uninterested.* Lastly, the students explained some of their feelings about the courses conducted in only L2 had been changed after the first weeks of their courses. They explained they *first felt fearful, anxious, confused, and stressed,* but these negative feelings were changed into positive ones in time.

> *"First of all, it frightened me that the lesson was taught in 100% English. I was trying to understand the sentences by inferring from the words. But over time, this fear passed."* S32F

> "*At first, I felt stressed and anxious because I had not been in the classroom environment where lessons had been taught in such a style before."* S9F

3.2. The views of the students about the courses carried out in only L2 and in L1&L2

When the students were asked about the courses carried out in only L2 and L1&L2, they mentioned their views focusing on the advantages and disadvantages of the courses.

3.2.1. Students' views about the advantages of the courses carried out in only L2

Table 2. *Students' Views about the Advantages of the Courses Carried out in Only L2*

Theme	Codes	f
Effectiveness of the course	Enabling students to learn English	31
	Enabling permanent learning	3
	Making learning easier	3
	Enabling fast learning	2
	Enabling easy learning	1
	Sub-total	40
Contribution to speaking skill	Improving speaking skill	21
	Improving the ability to make sentences in English orally	6
	Enabling learning by speaking	5
	Sub-total	32
Contribution to vocabulary knowledge	Improving vocabulary knowledge	16
	Enabling permanent vocabulary learning	10
	Making it easier to learn vocabulary	2
	Sub-total	28
Contribution to listening skill	Improving voice familiarization	16
	Improving listening skill	6
	Comprehending easily uttered vocabulary	3
	Sub-total	25
Contribution to pronunciation skill	Improving pronunciation skill	11
	Enabling proper pronunciation of vocabulary	9
	Sub-total	20
Increasing students' effort for learning	Enabling students to make a learning effort	14
	Sub-total	14
	Total	159

As Table 2 depicts, the students thought that the courses carried out in only L2 had a higher level of effectiveness, contributed especially to their speaking skills, and increased their vocabulary knowledge besides contributing to their listening and pronunciation skills. Lastly and maybe most importantly, they indicated in such courses, they made more effort for learning.

> *"Although it was quite difficult at the beginning of the term, as I worked overtime, I started to both speak and understand our teacher."* S8F

"We had English lessons every year in high school and elementary school, but there was no progress. When the lesson is taught in 100% English, hearing and understanding words will further contribute to our progress." M3F

Explaining the advantages of such courses under six themes, they most frequently uttered such courses enabling them to learn English by improving their speaking skill, vocabulary knowledge, voice familiarization, and pronunciation skill. A more detailed analysis of Table 2 shows that the students repeatedly explained their views about speaking and listening skills and some related knowledge/skills, one of the *commonly* unreached aims of FLCs.

3.2.2. Students' views about the advantages of the courses carried out in L1&L2

Table 3. *Students' Views about the Advantages of the Courses Carried out in L1 and L2*

Theme	Codes	f
Comprehensibility of the course	Ensuring comprehensibility of all the courses	20
	Ensuring clarity of the courses	17
	Ensuring higher comprehensibility of the courses	12
	Sub-total	49
Contribution to active participation in classes	Communicating easily with the instructor	13
	Enabling students to be active in courses	12
	Asking questions when it is not understood	4
	Enabling students to explain themselves	3
	Sub-total	32
Effectiveness of the course	Enabling students to learn English	18
	Enabling students to learn the logic of English	1
	Enabling permanent learning	1
	Sub-total	20
Contribution to vocabulary	Enabling permanent vocabulary learning	5
	Increasing vocabulary knowledge	4
	Making it easier to learn new vocabulary	2
	Sub-total	11
Contribution to grammar	Increasing grammar knowledge	11
	Sub-total	11
Contribution to communication skill	Improving communication skill	4
	Sub-total	4
Contribution to speaking skill	Improving speaking skill	2
	Sub-total	2
	Total	129

Table 3 shows that the students frequently explaining that the courses carried out in both L1 and L2 were easy to comprehend, to participate in classes, and effective. They also clarified that such courses contributed to their vocabulary and grammar knowledge while less frequently emphasized their contribution to communication and speaking skills.

"*The lessons are more efficient in this way. We can ask the subjects we do not understand in Turkish; the instructor should also convey these subjects in Turkish.*" T3M

"Since Turkish is our native language, of course, I can understand better what is meant to be explained or what is expected of me. As it was understood, my attendance rate for the course was higher." M3F

A closer look at Table 3 indicates the students repeatedly explained such courses as they were comprehensive and clear for them. In such courses, the students could easily communicate with the instructor, which made them more active in the courses and, in turn, enabled them to learn English. Table 3 also displays some controversial findings as the students much less frequently explained such courses contributed to their communication and speaking skills. However, they believed L2 only courses improved, especially their speaking and related skills, as seen in Table 2.

An examination of Table 2 and Table 3 reveals the main differences of students' views regarding the advantages of these two versions. Although the students explained the courses in L1 and L2 were efficient, especially in terms of grammar and vocabulary, they indicated the courses in only L2 were efficient in speaking, listening, pronunciation, and vocabulary.

3.2.3. Students' views about the disadvantages of the courses carried out in only L2

Table 4. *Students' Views about the Disadvantages of the Courses Carried out in only L2*

Theme	Codes	f
Preventing the active participation in classes	Preventing focusing on courses	12
	Difficulty in expressing themselves	11
	Preventing attendance to courses	8
	The inability for students to express themselves	7
	Decreasing the will to participate in the course	5
	Passivation the students in courses	5
	The inability for students to understand the questions	2
	Sub-total	50
Ineffectiveness / inefficiency of the courses	The incomprehensibility of the course	29
	Having difficulty	8
	The inefficiency of the course	5
	Ineffectiveness in grammar teaching	2
	Sub-total	44
Preventing teacher-student interaction in classes	Difficulty in asking questions to the instructor	5
	The inability for students to ask questions	5
	Difficulty in communication with the instructor	5
	Difficulty in understanding conversations	2
	Sub-total	17
Higher level of difficulty of the courses	Too challenging	3
	Too challenging at first	2
	Sub-total	5
Difficulty in learning new vocabulary	Difficulty in comprehending new vocabulary	3
	Insufficiency in learning new vocabulary	2
	Sub-total	5
	Total	121

In terms of the disadvantages of the courses carried out in the only L2, the students claimed such courses prevented their active participation in classes, and there were hindrances about effectiveness/efficiency of the courses and teacher-student interaction in classes. For instance, one of the students explained a vicious circle in terms of inefficiency of such courses, uttering that *"I could not attend the lesson. Because I did not understand much. Even if I understood something, I could not answer. It was inefficient for me."* S20M. We can conclude such courses prevent students from focusing on courses and cause difficulties in expressing themselves.

On one hand, in terms of disadvantages, the students most frequently explained that such courses are incomprehensive (f:29). This overwhelming view about the effectiveness / efficiency of the courses needs a closer look. As one student (M3F) honestly indicated, "*When I do not understand what the teacher expects me to do and she does not recognize me, I wait for remedilessly"* and she added because of her proficiency level, *"I cannot explain myself"*. We can infer that the students have encountered difficulties in participating in the courses due to their lack of proficiency in the target language.

> *"I did not like 100% English lessons, as I do not like to speak English. I did not like to attend the class. Because I could not speak. Our teacher was very good and motivated. But I was not like that."* S15F

> *"Since there are some points I do not understand in the lesson, I cannot contact the instructor and I cannot answer the questions given in the lesson because I cannot speak English."* T17F

3.2.4. Students' views about the disadvantages of the courses carried out in L1& L2

Table 5. *Students' views about the disadvantages of the courses carried out in L1& L2*

Theme	Codes	f
Ineffectiveness/inefficiency of the courses	Not contributing to the academic development of students	23
	Being ineffective in learning	10
	Not enabling permanent learning	5
	Less contribution to students' academic development	4
	Ineffective in learning by hearing	4
	Courses' focusing on memorization	3
	Causing distractibility	1
	Sub-total	50
Students' learning effort	Students' not pushing themselves	15
	Decreasing students' desire to learn	11
	Prompting students to be lazy	6
	Sub-total	32
Inefficiency in vocabulary teaching	Ineffective in teaching vocabulary	17
	Sub-total	17
Inefficiency in speaking skill development	Ineffective in the development of speaking skill	11
	Sub-total	11
Inefficiency in grammar teaching	The predominance of grammar teaching	2
	Ineffectiveness in grammar teaching	1
	Sub-total	3
	Total	113

Regarding the disadvantages of the courses carried out in both L1 & L2, the students claimed such courses were generally inefficient, decreasing students' learning efforts, and there were hindrances about increasing students' vocabulary knowledge, speaking skill, and grammar knowledge. Taking a closer look at the table, the students frequently explained such courses did not contribute to their academic development, they were ineffective in learning English, and some other supporting details. They also emphasized such courses did not push students to learn and decreased their desire to learn.

> *"When Turkish is spoken, I feel comfortable. I am not trying to understand. Because I know the teacher will explain the subject in Turkish."* T18F

> *"I know that the teacher will explain it in Turkish after she finishes speaking in English, so I do not try to understand her while she is speaking in English."* S12M

An examination of Table 4 and Table 5 reveals the contradictory findings in terms of the disadvantages of the two cases of FLCs. The students described that the courses in L1 and L2 were not efficient in increasing students' learning effort. The same group of students claimed the courses in only L2 prevented their active participation in classes.

3.3. Students' preferences about L1 use in foreign language courses

Students' preferences about L1 use in FLCs were asked twice in both of the interviews made for the two cases. Students' preferences and the changes can be seen in Table 6.

Table 6. *Students' Preferences sbout Using L1 in Foreign Language Courses*

Students' preferences	1st case (n)	2nd case (n)
L1 should not be used in the courses	78	49
L1 should be used in the courses	12	41
Total	90	90

Nearly all of the students preferred courses conducted in only L2 in the first case where the FLCs were conducted in L1 & L2. However, after the second case where only L2 was used in FLCs, a slightly more than half of them explained L1 should be used in the FLCs. As Table 6 shows nearly 29 students, one-third of the

study group, changed their mind. In the second interviews, the students in favour of L1 use in FLCs made extra explanations about the time when L1 should be used in courses as shown in Table 7 below.

Table 7. *Students' Preferences about the Time When L1 Should be Used in Foreign Language Courses*

Students' preferences	f
Explaining new words	29
Making grammatical explanations	27
Giving instructions	20
Explaining the questions not understood	18
Announcing about the exams	3
Total	97

Table 7 displays the students' preference for their teacher's use of L1 while especially explaining new words and grammatical issues. Their preferences are parallel with their views about the disadvantages of the courses in only L2 such as "difficulty in learning new vocabulary, inefficiency in grammar teaching, inability for students to understand the questions" as seen in the Table 4. On the other hand, although they explained that the courses in L1 and L2 had some drawbacks like inefficiency in vocabulary teaching, speaking skill development, and grammar teaching, they still wanted L1 use in similar courses. It should be added that the students frequently explained the courses in only L2 contributed to their vocabulary knowledge, although they prefer L1 use while explaining new words. Such controversies explained above can be resulted from the different proficiency levels of the students.

4. Results and Discussion

The students in the current study explained they felt relaxed, motivated, and satisfied when both L1 and L2 were used in their courses in the first case. The findings support Kahraman's (2009) study to investigate "whether or not using learners' mother tongue judiciously in foreign language classrooms fosters affective factors". He concludes that L1 use has a significant psychological effect and using L1 can lower learners' language anxiety and enhances a more positive and secure environment. Likewise, the students in the study indicated they felt more anxious, nervous and distracted in the courses in only L2 in the second case. These feelings may cause resistance and lack of motivation, which were regarded as the instructors' main problems for learners in higher education (Unal & Ilhan, 2017). The findings are supported by some other studies which show that the use of L1 can reduce students' stress in the classroom (Cianflone, 2009; Fernandez-Guerra, 2014; Spahiu, 2013), reduce anxiety in the classroom and help to create a pleasant learning atmosphere (Rolin-Ianziti & Varshney, 2008), provide a sense of security (Auerbach, 1993), promote students' confidence in the classroom (Brooks-Lewis, 2009), and make the learning environment pleasant (De La Campa & Nassaji, 2009). Furthermore, having a lower level of stress can positively affect students' learning (Azizifar, Faryadian, & Gowhary, 2014). L1 use also plays an important role in making learning meaningful and easier and courses - if conducted communicatively, courses are more effective particularly for shy learners or those who feel less proficient in L2 (Brooks-Lewis, 2009; Nation, 2003).

One of the most important findings of our study is that the students expressed their unwillingness to participate in L1& L2 courses while they felt more motivated in the courses in only L2. However, the literature review shows many researchers found out that allowing L1 use can motivate learners and increase their confidence in using L2 (Baily, 2005; Cianflone, 2009; Fernandez-Guerra, 2014). The learners' profiles can be explained with the difference. In our study, the learners are adults who are aware of their needs and they believe the use of L1 is a hindrance to L2 learning (Gaebler, 2014) and are hesitant to use L1 (Nazary, 2008). On the other hand, in Gaebler's (2014) study, the adult learners explained they felt comfortable with the use of L1 as in our study. Since most researchers warn that overuse of the L1 can lead to overdependence on the L1 (Nation, 2003), the students in our study had many experiences of using the L1 in foreign language courses in their educational backgrounds. Thus, it can be concluded that some adult learners are aware of the risk of overdependence and prefer not to use the L1 even if they feel more comfortable in such courses.

The students explained various advantages about the courses carried out in L1& L2 as in the first case. They thought the courses were easy to comprehend to participate in and also were effective. Moreover, they clarified such courses contributed their vocabulary and grammar knowledge while they less frequently emphasized

their contribution to communication and speaking skills. One reason for that view about the easiness of such courses to comprehend can justify some results of other studies. For example, Cook (2010) reached out that the use of students' native language in the class can boost students "focus on form" and it can help them "notice" that L1 use can significantly improve their learning as concluded by Navidinia, Mobaraki, & Malekzadeh (2019). Besides, in his study with university students, Fernandez-Guerra (2014) indicated L1 use can help students to learn the linguistic and cultural issues and improve their comprehension. Similarly, Miles (2004) maintained using L1 can actually help the learning process because students outperformed in the exercises they were allowed to use their L1. The outperformance is also frequently explained by the students in our study. As in this current study, when students use L1 in their learning process, they are encouraged to engage with L2 (De La Campa & Nassaji, 2009; Lo, 2015). Moreover, the advantages the students indicated for learning some grammatical points both in L1&L2 courses are also found out in other studies (Grim, 2010; Macaro, 2001; Williams, 1999).

For the second case, the students asserted the courses in only L2 were more efficient in general, especially in improving their speaking, listening, pronunciation skills, and vocabulary levels. In parallel with the students' views in our study, L1 use in FLCs is seen as inappropriate and unjustifiable in speaking/listening activities (Cole, 1998; Edstrom, 2006). When the concern is especially speaking skills, L1 use is counterproductive, more detrimental than productive (Brooks-Lewis, 2009; Mart, 2013; McMillan & Rivers, 2011). But recently, the number of studies reaching out the benefits of L1 use is increasing (Cook, 2001; Galali & Cinkara, 2017; Jafari & Shokrpour, 2013; Swain & Lapkin, 2000; Vázquez & Ordóñez, 2019; Yüzlü & Atay, 2020). It can be concluded that the students in our study took place in the first group in these contrasting views concerning the effect of L1 in speaking/listening skills.

In terms of the courses in the first case, the students frequently indicated these courses were easy to comprehend. For the second case, they most frequently explained the courses in only L2 were incomprehensive for them, which resonate with the results posited by many researchers (Cook, 2010; McMillan and Rivers, 2011; Nation, 2003; Norman, 2008; Park, 2013; Weschler, 1997). Moreover, these findings can affect students' English proficiency level because when L1 is used as a fast tool to dismiss difficulties by both the students and the instructor. Although these studies continuously indicated L1 use brings easiness and enhances L2 learning, the ease was regarded as a drawback by most of the students in our study. The same student group criticized the courses both in L1&L2 for decreasing students' learning effort and not moving them. When all the results come into consideration together, it can be concluded that the students- adult learners in our case- regard only L2 policy as a drive for themselves. The findings support the idea that limited L1 use should be there for adult learners (Atkinson, 1987; Cianflone, 2009; Littlewood & Yu, 2011). However, another finding of this study reveals a contradiction among the views of students. Although the students explained the courses in L1& L2 were not efficient in increasing students' effort for learning, the same group of students claimed the courses in only L2 prevented their active participation in classes. This contraction reminds the professionals of the phenomenon's disunity and inconclusiveness (Schweers, 1999), which makes it vital to conduct further research, especially giving special attention to adult learners.

Although the students most frequently explained positive feelings and views in favour of the courses in the second case, they changed their minds when asked about their preferences. The changes can be a sign that students have been aware of the possible benefits of L1 use as pointed out in the studies by Al Sharaeai's (2012), Oflaz (2009), and Paker and Karaağaç (2015). This study also reveals the students want to be free to use the fundamental and strategic application in teaching contexts (Cook, 2001) - L1- whenever they need for specific occasions. The students also listed these specific occasions as explaining new words and grammatical issues, giving instructions, and answering questions. These occasions are called as crucial functions L1 has in foreign language teaching and regarded as the most striking aspects in the studies of Afzal (2013), Auerbach (1993), Burden (2000), Celik (2008), Cook (2001), Debreli and Oyman (2016), Dujmovic (2007), Edstrom (2006), Ekmekci (2018), Mattioli (2004), Schweers (1999), and Tang (2002). For example, Auerbach (1993) suggests the following uses for learners' first language: language analysis and presenting grammar structures, classroom management, giving instructions or prompts, explaining errors, discussing cross-cultural issues, and checking comprehension. Celik (2008) classified the uses into two groups, physical/mechanical factors (e.g., to save time, to help students avoid confusion about complex concepts and ideas in the L2, to be more effective for students, to stimulate memory and semantic processing, to raise students' awareness of language learning processes)

and social/emotional factors (e.g. to help students not to develop negative feelings towards the L2 and its community by banning the L1 because it is their identity).In our study, the students frequently uttered physical/mechanical factors in explaining their preferences.

5. Conclusion and Suggestions

The debate on L1 use in foreign language teaching is enigmatic, with controversy ebb and flow with varying intensity but never approaching resolution (Auerbach, 1993). The conclusion made about thirty years ago has still survived and made it much more important to suggest criteria for time, way, and amount of L1 use instead of taking strong stances toward its inclusion or exclusion. The International Teacher Training Organization suggested the inclusion of L1. Still, it warned teachers to use it cautiously, otherwise "… you could be creating a crutch, which might be very difficult to fail as the students' improvement" (ITTO, 2007 cited by Brooks-Lewis, 2009). To achieve balanced and alternated on an as-needed basis (Saengboon, 2010) L1 use, agreeing on a policy with the involvement of students – especially adult learners in our case- may be a good way. It is so evident in Brown's (2000, p.14) assumption that there is no easy and quick way guaranteed to provide success and every student, teacher, student-teacher relationship, and every context is unique. In order to use this uniqueness for the benefit of students, such a policy adopted by students and teachers can support the process of appropriate and necessary use of the L1 and eliminate the disadvantages of excessive use of L1 in the foreign language teaching/learning process.Through this study, we hope instructors as decision makers at higher education will be able to better understand the views and preferences of their students about L1 use. This study might effect instructors in terms of questioning their own L1 use and being more aware of their students' views. The results of this study give some insights for decision-makers that use of L1 might also be necessary from time to time, so it should not be forbidden but its frames should be determined with a collaboration of instructors and students. This study might also increase instructors' awareness about time, way, and amount of first language use in their courses.

The results of this study can partly be generalized to various teaching contexts and foreign language learners due to the context-specific factors and uniqueness of each teaching and learning environment. For future studies, it might be fruitful to enhance the practices of instructors by utilizing translanguaging pedagogy which is a purposeful incorporation of native and second or third languages and help them to build bridges between languages and cultures. Besides, students may construct their competence of the weaker language while benefiting from the knowledge of their native language which is the dominant one. In addition, similar studies could be conducted focusing on the effects of L1 use on academic achievement, improvement in various language skills, etc., or examining differences in students' views and preferences regarding L1 use in L2 classrooms in relation to their language level, gender, and university subject areas. Finally, further studies could be conducted to include the views and preferences of lecturers and other decision makers such as administrative staff in higher education.

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Irrational Beliefs in Parenting Behaviors: Comparison of Turkish and Syrian Parents

Ali ÇEKİÇ[1], Ülkü PAKSAL-ÇETİN[2], Ahmet BUĞA[3]

[1]*Gaziantep University, Faculty of Education, Gaziantep, Turkey* *0000-0002-7893-268X*

[2]*Minister of National Education, Gaziantep, Turkey* *0000-0003-4118-0688*

[3]*Gaziantep University, Faculty of Education, Gaziantep, Turkey* *0000-0002-9598-2451*

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ABSTRACT

This study aims to examine the irrational beliefs of Turkish and Syrian parents about parenting behaviors. The study was conducted with 22 mothers and eight fathers whose children are in kindergarten. Content analysis method was used for the analysis of the data acquired within the scope of the study. Four different cases were presented to the mothers and fathers in the study that they can encounter while raising their children. They were asked questions on their beliefs, emotions, and behaviors when faced with these circumstances. The first result obtained from the study findings is that the mothers made more irrational evaluations in all four scenarios than the fathers. Another finding from the study is the similarity of responses to all scenarios from Turkish and Syrian mothers. In summary, in line with the ranking of gender inequality in Turkey, fathers may have identified with a more masculine role and therefore tend not to see themselves as responsible for the care, upbringing and possible problems related to their children.

Keywords:
Parenting, irrational beliefs, qualitative method.

1. Introduction

Being a parent is one of the most important and challenging responsibilities that an individual undertakes during his/her life. Throughout history, parents have strived to improve themselves in issues such as how to be a better parent or how to raise their children. The first practices related to interfamilial relations and the responsibilities of parents date back to Sumerian texts. As in many communities, the primary responsibility for the child's upbringing and development was given to the mother (Oktay, 2011).Although this is still largely true today, it should be noted that women's better access to education, their participation in professional life and the growing awareness of gender equality in society have led to fathers taking on more responsibility in raising children and contributing to their children's development together with their mothers..

Parenting behaviors that make up the source of the attitudes and behaviors of the parents concerning raising their children are fed from different resources. According to Grusec and Danyluk (2014), three primary resources affect parents' behaviours. First is the behavior of their parents. Books, websites, formal or informal advice make up the second resource. Whereas the third and the most effective resource, regardless of whether parents are aware of it is the active beliefs throughout parenting. The beliefs of parents on parenting are mostly made up of their personal experiences. These experiences of the parents are also significantly affected by the cultural values they were born into and raised in (Goodnow, 1988).

[1] Corresponding author's address: Gaziantep University, Faculty of Education, Gaziantep, Turkey
e-mail: alicekic79@gmail.com
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As is the case in many areas of human life, the beliefs that impact our attitudes and behaviors related to parenting are assumptions of individuals with regard to the presence or absence of certain things. For parents, these beliefs may be at two opposite poles with varying certainty or levels such as whether the child is hardworking or not (Hırsjarvi& Perala-Littunen, 2001).

Founder of Rational Emotive Behavioral Therapy Albert Ellis states that individuals believe in all circumstances or events they encounter. According to REBT, these beliefs may display rational or irrational characteristics. Rational beliefs are flexible, logical and scientific. They help individuals overcome the problems they are faced with while also preserving their mental health (Sharf, 2014). This is also true for parents. A father whose son received a low grade from an exam may see the reasons and solutions of the problem more easily when he has the belief that, "My son did not study enough, he needs to study more". However, it may be much more difficult to come up with a solution if in the same situation, the father has the belief that, "My son is lazy. He laid around all year and never studied".

Furthermore, the irrational beliefs of parents are somehow passed on to their children as well. As an example, Jonhson (2010) put forth proof that certain irrational beliefs are passed down to children from their parents. Azizia and Besharat (2011) observed that the irrational perfectionist characteristics of parents affect their children, leading them to display perfectionist behaviors themselves.

According to Ellis and Harper (2005), this is due to the fact that their parents influence children as role models. Because REBT asserts that the important people in the lives of children play a critical role in acquiring irrational beliefs (Corey, 2015), irrational beliefs acquired in this manner may be transferred into a rule by the individual. Thus, the irrational ways of thinking of the parents have adverse impacts on their children and themselves.

Children oriented practices of Rational Emotive Behavioral Therapy lead to positive impacts in different areas such as anxiety, destructive behaviors, academic success and self-concept. The positive effects of REBT in these areas are observed more frequently in children than in adolescents (Gonzalez, et al., 2004).It was observed as a result of a meta-analysis study on the practices of Rational Emotive Education as a psycho-education procedure based on REBT principles that RET played an effective role in decreasing nonfunctional behaviors and negative emotions as well as in leading the participants to make positive inferences. Moreover, this has been observed more frequently in children and adolescents compared with adults (Trip, Vernon and McMahon, 2007).Based on the results of both studies, it can be said that helping children acquire rational thinking skills leads to more effective and beneficial results compared with adolescents and adults. Such psycho-education or therapy practices may be used to help children acquire rational thinking skills , but parents' behaviours are also among the most effective methods.

As can be understood from previous studies, parents somehow pass down their irrational beliefs to their children. However, the irrational beliefs of parents also affect their own parenting behaviors thus determining their communication, attitudes and behaviors towards their children. Putting forth the reasons underlying the behaviors that parents display in their roles of parenthood and comparing the results concerning gender and culture will positively contribute to a better understanding of parental behaviors. For this purpose, the present study aimed to determine the parenthood beliefs considered to lead parental behaviors and to put forth the rational and irrational aspects of these beliefs concerning REBT. The impacts of gender, or being a mother or a father, and the impacts of the education level and the cultural values were also taken into consideration comparatively while putting forth these factors. For this purpose, answers were sought for the following questions within the scope of the present study:

1. Does the state of rationality or irrationality of the beliefs that guide parental behaviors differ in mothers and fathers?
2. Does the state of rationality or irrationality of the beliefs that guide parental behaviors differ concerning culture?

2. Methodology

2.1. Research Model

Phenomenology from among the qualitative research patterns was used in the present study to examine the reactions to different situations of mothers and fathers as parents and to put forth the beliefs that are among

the most important concepts of the cognitive processes underlying these reactions. The phenomenology pattern focuses on phenomena that we are aware of but do not have an in-depth understanding on (Yıldırım&Şimşek, 2011). As an example, REBT asserts that beliefs are the underlying reasons for the reactions of individuals against the events or circumstances they encounter (Corey, 2015). This study will how the relationship between beliefs, emotions, and behaviors influences parents and how they are reflected in child upbringing behaviors. The pattern of phenomenology lays down a suitable foundation for such concepts that are familiar but not fully understood.

2.2. Research Sample

The study group composed of 22 mothers and eight fathers whose children were continuing their education in a private kindergarten in the city center of Gaziantep province. Ten of the mothers were Turkish nationals and 12 were Syrian nationals. The duration of the Syrian mothers' immigration to Turkey and the length of their stay in Turkey varied between 5 and 8 years.All fathers were Turkish citizens. The parents in the study group were living with their children. The qualitative data acquired from the parents during face-to-face interviews conducted by their preschool teachers were classified in themes predetermined by experts and frequencies were provided for each question. Information on the participant's number, age and education level was provided as an explanation in parentheses after the mothers' responses (e.g.; F1, 30, Primary School). Table 1 presents the demographic data for the study group.

Table 1. *Demographic Data of the Participants*

Nationality			Parenting Status			Education Level			Mean age
	n	%		n	%		N	%	
Turkey	18		Mother	10	55	Primary School	4	40	29,1
						High school	3	30	
						University	3	30	
			Father	8	45	Primary School	4	50	32
						High school	2	25	
						University	2	25	
Syria	12		Mother	12	100	Primary School	6	50	30,2
						High school	3	25	
						University	3	25	

The majority of the participants are comprised of Turkish parents. The primary reason for this is the inability to contact Syrian fathers. About half of the participants are primary school graduates. The numbers of high school and university graduates were equal. The mean age of the participants was 30,3.

2.3. Data Collection Tools and Procedure

Four different scenarios related to their children were provided to the parents within the scope of the study. These scenarios are comprised of events that can take place in the daily lives of the parents and their children at different areas of their lives. The scenarios include events that can frequently occur at different areas such as home, school, park and market where they spend time and communicate with their children. The researcher prepared the research questions regarding the related literature, and expert opinions were taken on the questions afterwards. Questions on their opinions, emotions, and behaviors regarding the four different scenarios were asked to the parents and audio recordings of the responses were taken. The scenarios and questions used in the present study are as follows:

Scenario 1: "Your son/daughter is playing in the park. And you are sitting on the sidelines watching. You avert your gaze for a moment and notice that your child has climbed to the top of the slide." In such an instant;

- **a.** What would be the first thing that comes to your mind? What would you think?
- **b.** What would you feel? What would be your emotions?
- **c.** How would you act? What would you do?

2nd Scenario: "The teacher of your son/daughter called you to school and told you that your child cannot get along with his/her friends. The teacher said that he/she hits his/her friends harming them. The teacher also told you that this behavior has been going on for some time, despite several admonitions, and that today your

child threw the toy they were fighting over, splitting the other child's eyebrows. The teacher also told you that he/she has spoken with the school's mental health counselor and that it would be best for your child to seek treatment from a psychiatrist."In such an instant;

a. What would be the first thing that comes to your mind? What would you think?
b. What would you feel? What would be your emotions?
c. How would you act? What would you do?

3rd Scenario: "You went to the market for shopping with your son/daughter. Even though you told him/her that he/she can buy only one thing, your son/daughter asked for more. When you told him/her that he/she can only buy one thing, he/she started crying and banging on the floor."

In such an instant;

a. What would be the first thing that comes to your mind? What would you think?
b. What would you feel? What would be your emotions?
c. How would you act? What would you do?

4th Scenario: "You set the table for dinner and sat down for dinner. Your son/daughter said he/she will not eat dinner. Because he/she did not like it."

In such an instant;

a. What would be the first thing that comes to your mind? What would you think?
b. What would you feel? What would be your emotions?
c. How would you act? What would you do?

The study was conducted with 22 mothers and eight fathers whose children are in kindergarten. Content analysis method was used for the analysis of the data acquired within the scope of the study. Four different cases were presented to the mothers and fathers during the study that they can encounter while raising their children. They were asked questions on their beliefs, emotions, and behaviors when faced with these circumstances. Mothers and fathers were informed about the study, after which parent volunteers were invited to the school and their consent was obtained. Questions were asked face-to-face to the mothers and fathers by the preschool teachers during the agreed time and their responses were audio-recorded for further analysis.The data acquired within the scope of the study were evaluated by two different experts and themes were determined in accordance with REBT. According to REBT, while individuals' beliefs in themselves, other people and life can be harsh and exaggerated, they may also display flexible and unexaggerated aspects. Accordingly, if the individual has strict and excessive thoughts, this style of thinking also leads to three irrational forms of evaluation (Dryden and Neenan, 2004; Dryden, 2012):

1. Catastrophizing Beliefs: Evaluation of a situation much worse than it actually is.

2. Low Frustration Tolerance Beliefs: Individual's belief that he/she will not be happy in case undesired circumstances arise.

3. Devaluation Beliefs: The individual devaluating himself/herself, others and life.

4. Rational Beliefs: Flexible and unexaggerated beliefs are not catastrophizing and have a high frustration tolerance.

2.4. Data Analysis

The contents were then assessed separately by two experts and placed inside the determined themes. Inter-judge reliability coefficients for these two assessments were calculated using the following formula suggested by Miles and Huberman (1994):

$$\text{Reliability} = \frac{\text{Number of Agreements}}{\text{Total Number of Agreements+Disagreements}}$$

Inter-judge reliability values above .70 seem to be sufficient for the reliability of the assessments made (Miles & Huberman, 1994). Table 2 presents the inter-judge reliability values obtained within the scope of the present study.

Table 2. *Inter-judge Reliability Coefficients Obtained for the Study Questions*

Items	1	2	3	4
Reliability Coefficient	0,87	0,80	0,80	0,87

The reliability coefficients obtained from the assessments made by two different experts can be interpreted to indicate that the data acquired during the study are sufficient.

2.5. Ethical

The study first obtained the necessary permissions from the preschool institutions for data collection. Participants were informed about the purpose of the study, its voluntary nature, and the confidentiality of personal data. They were also informed that the audio recordings of the parents' responses to the qualitative interview form would not be used; only the statements they made while maintaining their personal information would be included in the study.

3. Results

The data acquired during the study were categorized as the beliefs of Turkish mothers, Turkish fathers and Syrian mothers for each scenario and presented below.

Table 3. *Opinions of Turkish Mothers Related to the First Scenario*

Categories	N	Opinions of the mothers
Catastrophizing	7	I would instantly think that he/she will fall. I would think, what if we cannot make it on time to the hospital when he/she falls. I would stand up right away to try to take him/her down. (F1, 28, High School)*
Rational Evaluation	3	I would be scared. I would think that something will happen and he/she will get hurt. I would tell him/her that he/she can fall and hurt himself/herself and I would warn him/her to be more cautious (F5, 27, University)*

The majority of the Turkish mothers used the catastrophizing beliefs as expressed by REBT when reacting to the scenario. At the same time, three of the mothers made a more rational assessment indicating that they would react. When considered a percentage, 70 % of the Turkish mothers evaluated the first scenario irrationally, which is considered a catastrophe and reacted accordingly. While 30 % perceived the situation more realistically without exaggerating it in a positive or negative sense, accepted the situation and reacted accordingly.

Table 4. *Opinions of Turkish Fathers Related to the First Scenario*

Categories	N	Opinions of the fathers
Catastrophizing	4	I would feel bad, I would panic. I would think, what if he/she falls and something happens. I would immediately rush to his/her side, take him/her down and tell him/her to never do that again. (F11, 29, Primary school)
Rational Evaluation	4	I would think that he/she has grown up. I would perhaps feel a bit anxious but I would still feel happy that he/she has grown up. I would think, “Can he/she fall down?” but we are at the park right, he/she has not climbed on a window ledge. I wouldn’t panic a lot. I would tell him/her to be more cautious. (F17,31, University)

The responses to the first scenario of the Turkish fathers were equally divided into the two categories of catastrophizing and rational evaluation. This indicates that half of the fathers considered the situation as a catastrophe and acted accordingly. In contrast, the other half considered the situation more rationally and responded that they would react accordingly.

Table 5. *Opinions of Syrian Mothers on the First Scenario*

Categories	N	Opinions of the mothers
Catastrophizing	8	I would be scared that he/she may fall. What would I do if something happened, if he/she fell, get injured, or worse… I cannot bear that. I would run there and take him/her down. (F23, 26, High School)
Rational Evaluation	4	Of course I would be scared a bit. I would consider going there and helping him/her.I would not go if there isn't anything too dangerous and I would advise him/her to be more cautious. (F21, 27, High School)

It can be stated based on the evaluation of the responses of Syrian mothers to the first scenario that the majority include erroneous cognitive assessments. Eight of the mothers perceived the situation as a catastrophe, while four mothers evaluated the situation more rationally and stated that they would react accordingly. A total of 7 mothers corresponding to 66 % evaluated the situation more rationally. It did not distort it, while 33,3 % perceived the situation to be more negative than considering it a catastrophe.

Table 6. *Opinions of Turkish Mothers on the Second Scenario*

Categories	N	Opinions of the mothers
Devaluation	7	I would feel very bad. I would think about my own mistakes. I would think, What am I doing wrong?Why is this so? I would try to find out why my child is acting this way. I would speak with my spouse and try to find out our mistakes. I would go to the psychiatrist as soon as possible. (F9, 32, University)
Rational Evaluation	2	This is actually how he/she always acts, my child always quarrels with his/her friends. I would consider taking him/her to the psychiatrist but he/she is just a child. I would act calmly. (F1, 28, High School)
Low Frustration Tolerance	1	I would feel very bad, indeed I would cry. I would ask him/her why he/she acted like this after talking to him/her with his/her father. I would take him/her to the psychiatrist. (F7,28,High School)

When the mothers' responses to the second scenario were evaluated, it was observed that while eight mothers distorted the situation, two of the mothers indicated that they would react after a more realistic evaluation of the situation. Seven of those who distorted the situation and made a more negative evaluation resorted to devaluation ideas, while one of the mothers responded catastrophically. The percentages of the Turkish mothers' responses to the second scenario showed that the responses of 80% of the mothers included irrational evaluations, while only 20% made rational evaluations and did not perceive the situation as worse than it actually is.,

Table 7. *Opinions of Turkish Fathers on the Second Scenario*

Categories	N	Opinions of the fathers
Rational Evaluation	5	Of course I would feel sad. I would make a self-criticism as a parent. I would talk to the child and state that what he/she has done is not right.I would treat him/her more calmly at home and ask him/her to do the same. (F13,32, Primary School)
Low Frustration Tolerance	3	I would feel very bad and anxious for my child. I would think why my child is like this. I would immediately talk to my child and take him/her to the psychologist.(F11, 28, Primary School)

Rationality was in the majority with five fathers among the evaluations of Turkish fathers regarding the second scenario. In contrast, three fathers made a negative evaluation based on low frustration tolerance and could not assess the given scenario rationally. Concerning percentages, 62,5 % realistically evaluated the given scenario and reacted accordingly, while 37,5 % considered the scenario negatively indicating that it would make them unhappy.

When the responses of Syrian mothers to the second scenario were examined, only three mothers stated that they would evaluate the situation with a realistic perspective and would react accordingly. Four of the remaining nine mothers indicated that they would not be happy at all in such a case, three estimated the situation to be worse than it is, stating that they would consider it a disaster, while two indicated that they

would question their parenting skills and devalue themselves in such a scenario. The percentages show that 25% of the mothers evaluated the situation rationally and 75% irrationally..

Table 8.*Opinions of Syrian mothers on the second scenario*

Categories	N	Opinions of the mothers
Low Frustration Tolerance	4	Of course I would feel despondent. I would think why this is happening. I would think about how I can help my child. I would ask help from specialists and I would of course take my child to a psychologist. (F20, 34, Primary School)
Rational Evaluation	3	I would feel slightly sad but we also used to argue sometimes as a child.I would consider it as something that may happen. Nothing important if it doesn't happen very frequently. If it's the first time I would talk to my child and if it takes place frequently I may take them to a doctor. (F21, 27, High School)
Catastrophizing	3	I would feel bad for him/her, it wouldn't be nice for him/her to be an aggressive person. No one would like or befriend him/her. I would think that there is a problem. He/she might have an issue. I may take him/her to a psychiatrist. (F23, 26, High School)
Devaluation	2	I would feel sad and ashamed. I would think that I failed to give the proper education. I would warn my child not to do this again. I would go to a specialist and ask for help. I would ask the specialist what I should do and what I did wrong. (F25, 27, High School)

Table 9.*Opinions of Turkish Mothers on the Third Scenario*

Categories	N	Opinions of mothers
Rational Evaluation	4	This is something that always happens, and they do not come out without getting what they want. I would ask my child to settle with what I bought. He/she may cry. There is nothing to do about it. (F1, 28, High School)
Low Frustration Tolerance	4	I would feel embarrassed in the crowd. I would convince my daughter and tell her that what she did is a "shame". I would try not to buy it but I generally do so in order to make her stop. (F8, 31, Primary School)
Devaluation	2	I would feel sad of course and I would get angry. I would question why he/she is doing something like this. I would try to find the middle path without offending him/her in public. (F4, 32, High School)

Four mothers rationalised the third scenario, whereas six mothers stated that they would be very happy in such a scenario or that they would question their own self-worth.In other words, it was observed that the reactions of 60 % of Turkish mothers included irrational evaluations with the reactions of the remaining 40 % including rational evaluations.

Table 10.*Opinions of Turkish Fathers on the Third Scenario*

Categories	N	Opinions of fathers
Rational Evaluation	5	I would perhaps feel slightly sad, or in other words I would get angry. But if we talked about this before and if I said that I will not buy anything else I will not buy anything else. I will talk to my child but I would not buy something just because he/she cried. (F12, 34, Primary School)
Low Frustration Tolerance	3	I would get mad and I would feel sad. I would take my child home right away. I world leave the market. I would tell him/her that I will never take him/her to the market if he/she does this again. (F18, 30, Primary School)

The majority of Turkish fathers indicated that they would evaluate the third scenario realistically and respond rationally. Three fathers gave an irrational evaluation, saying that they would not be happy at all in such a situation. Thus, when examining the fathers' responses to the third scenario, it can be seen that 62.5% contain rational opinions and 37.5% contain irrational opinions.

Table 11.*Opinions of Syrian Mothers on the Third Scenario*

Categories	Opinions of mothers
Rational Evaluation	I would not feel too much. I would think that he/she is just a child, children may cry. I generally talk to him/her before we go out and tell him/her what I will or will not buy. I would not do anything else. (F25, 27, High School)
Low Frustration Tolerance	I would get angry and I would feel sad. I would think that I have to go home right away because I would feel ashamed in front of all the people around us. I would not buy what he/she wants and I would punish him/her. I would never take him/her to the market unless I have to do so. (F23, 26, High School)

When the responses of the Syrian mothers to the third scenario were examined, six mothers, or in other words, half of the group, made rational evaluations. In contrast, the other half made irrational evaluations by indicating that they would feel unhappy in such a situation.

Table 12.*Opinions of Turkish Mothers on the Fourth Scenario*

Categories	N	Opinions of the mothers
Rational Evaluation	5	I would ask him/herwhy he/she is not eating. I would act normal, I mean I would not get angry. I would try to make him/her like the food and eat it. I would talk to him/her and say that he/she has to eat it even if only a few spoons. (F8, 31, Primary School)
Low Frustration Tolerance	3	I would get angry. I would feel sad.I would want to ask why he/she does not like it. I would not do anything, what can I do anyway? (F2, 29, Primary School)
Devaluation	2	Why didn't he/she like this food? Isn't it good? Should I cook something else? I am always indecisive in such situations. I feel sad. I would not force him/her to eat it but I would feel sad. (F10, 25, Primary School)

When the Turkish mothers' responses to the fourth scenario were examined, five mothers, or in other words 50 % of the Turkish mothers who took part in the study, said they would evaluate the situation rationally and not perceive it as worse than it already is. Three out of the remaining five Turkish mothers stated that they do not want to face such a situation at all and that they would feel sad if they actually did. Two mothers indicated that they would question their parenting skills and feel worthless in such a scenario.

Table 13.*Opinions of Turkish Fathers on the Fourth Scenario*

Categories	N	Opinions of the fathers
Rational evaluation	5	I would feel normal. Everyone has foods they do not like. So I would think it is normal. If he/she does not eat it because he/she really does not like it I would not insist and instead give him/her something else. (F14, 35, University)
Low Frustration Tolerance	3	I would get worried and wonder if he/she is sick.I would think why he/she is doing something like this. I would cook something else because otherwise he/she would cry and feel sad. I cannot bear that. (F16,35, High School)

Majority of the Turkish fathers made a rational evaluation for the fourth scenario, while the number of fathers with low frustration tolerance was lower. In other words, 62,5 % of the fathers accepted this situation with a realistic perspective and 37,5 % made an irrational evaluation of the scenario considering it as worse than it actually is.

Half of the Syrian mothers evaluated the situation rationally. Of the Syrian mothers, 33,3 % stated that they would evaluate the situation as unacceptable or unbearable, thus giving reactions with low frustration tolerance, while 16,6 % said they would perceive the situation as worse than it is thus reacting in a catastrophizing manner.

Table 14.*Opinions of Syrian Mothers on the Fourth Scenario*

Categories	N	Opinions of the mothers
Rational Evaluation	6	I would feel somewhat sad but not a lot. I would try to convince him/her to eat. I would tell him/her that he/she needs to eat even if only a little bit. For example, I would tell him/her to help me while cooking and so he/she would learn what is inside the dish. Perhaps it would be easier for him/her to eat it if he/she cooks it himself/herself. (F24, 26, University)
Low Frustration Tolerance	4	I would get angry but I would still not push him/her too much. I would think why this is the case and when will all these problems end. I would give him/her something else to eat in order to avoid problems. (F25, 27, High School)
Catastrophizing	2	I would feel sad. I would think that he/she will get sick. I would never want anything to happen to him/her. I would cook whatever he/she wants. (F23, 26, High School)

4. Conclusion and Discussion

The first finding of the study is that mothers gave more irrational evaluations compared to fathers in all four scenarios. While the proportion of rational opinions in the mothers' responses ranged from 70% to 50%, the proportion of irrational opinions in the fathers' responses varied from 50% to 37.5%. From these results, it can be concluded that the mothers' responses in all four scenarios contain more irrational valuations than the fathers' responses. There are studies in the literature that irrational beliefs vary according to gender (Balkıs& Duru, 2020). However, according to Coleman&Ganong (1987), irrational beliefs are related to gender roles rather than gender. It has been observed that individuals who have adopted the female gender role have more irrational beliefs than individuals who have adopted the male, rogynous and undifferentiated gender role. Thus, the finding of the present study that mothers have more irrational beliefs than fathers is more related to gender roles than gender. According to the World Bank report, women in all developing and underdeveloped countries spend more time on childcare (World Development Report, 2012). Moreover, this task assigned to the mother as a gender role is not affected by whether the woman is working or not (Craig, 2006). Moreover, it is usually the others who are blamed for the behavioral problems, developmental problems and pathological cases (Jackson &Mannix, 2004). These could be the reasons why Turkish and Syrian mothers do not prefer to respond to the presented scenarios with irrational beliefs presented by REBT, such as catastrophizing, devaluing and low frustration tolerance.

Another finding of the study is the similarity of responses to all scenarios among Turkish and Syrian mothers. While the proportions of irrational beliefs in Turkish mothers' responses to the four different scenarios presented in the study were 70%, 80%, 60% and 50% respectively, these proportions were 66.7%, 75%, 50% and 50% for Syrian mothers. The reason for this could be the common cultural heritage of the two countries. It is inevitable that Syria, which was a state of the Ottoman Empire for about 400 years (Oeztuerk, 2010), and Turkish Republic, which was the continuation of this empire, share a common cultural heritage. The fact that the study was conducted in the city of Gaziantep, which is located on the Syrian border, may also have contributed to the sharing of this common cultural heritage. The shared religious beliefs of the people in the two countries may also have played a role in the answers becoming more similar. There is a close relationship between religion and culture that encompasses shared values and norms of behavior (Dawson, 2013). For this reason, it is expected that the results of Turkish and Syrian mothers who participated in the study will have similar characteristics. The fact that Turkish and Syrian mothers gave predominantly irrational responses to the different scenarios in accordance with societal gender roles may be related to the ranking of the two countries in the global gender inequality ranking. According to this ranking, Turkey is ranked 130th out of 153 countries in terms of gender inequality, while Syria is ranked 150th (WEF, 2020). This may have led to a habit in both countries of seeing the mother as responsible for matters such as the care, development and upbringing of children and blaming mothers in the event of likely problems.

In summary, in line with gender inequality in Turkey, fathers have identified themselves with a more masculine role and therefore tend not to see themselves as responsible for the care, upbringing and possible problems related to their children. It is very likely that mothers in both cultures feel responsible, are perceived negatively when problems occur during the child's growth period, and blame themselves for these circumstances because this is a behavior they have been taught by the culture in which they live. In addition,

outside observers expect mothers to engage in irrational behaviors. For example, it sometimes happens that a mother duck approaches a dog, which she sees as a stronger and natural threat, instead of running away from it. Thus, we can say that viewing motherhood as a form of sacrifice, unrequited love and responsibility (Uçakcı-Asalıoğlu, et al., 2020) may have played a role in these results. Conducting studies with parents especially from different faiths and areas to further discuss the findings and present their generalizability will contribute to a better understanding and interpretation of the results. Based on the findings of the present study, it may be suggested that psycho-education programs based on REBT should be developed and that mothers should be made to participate more in such programs. It can also be suggested to develop psycho-education programs with different contents targeting only mothers or fathers if we take into account the differences in parents' ratings based on the study findings.

5. Limitations

It can be stated that the small number of Turkish fathers who participated in the study and the lack of participation of Syrian fathers may have been a significant limitation in identifying and comparing fathers' beliefs. Similarly, it can be said that language comprehension and expression during the qualitative interviews was a limitation, even though the Syrian mothers spoke Turkish well.

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Teacher Perceptions on the Concepts of Principal and Deputy Principal[1]

Ramazan ERTÜRK[2], Nuri AKGÜN[3]

[1]*Ministry of National Education, Bolu, Turkey* *0000-0002-8140-0895*

[2]*Bolu Abant İzzet Baysal University, Educational Sciences, Bolu, Turkey* *0000-0003-3225-6193*

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ABSTRACT

When the literature is examined, in some studies where the school administrator is considered a variable, only the school principal is considered the school administrator. In some studies, the views of the manager and assistant managers are evaluated together under the manager variable. This study aimed to reveal the metaphorical perceptions of teachers towards the principal and deputy principal to determine whether there is a difference between them and shed light on the scientific studies to be conducted. The research is qualitative, designed as a case study. The study group was formed by 289 teachers working in 9 public primary schools, 9 secondary schools and 7 high schools. The data of the study was collected by interview method and analysed by content analysis. According to the research results, there is a high level and significant difference between the concepts of principal and deputy principal according to the teachers' opinions. For this reason, these two concepts should be evaluated as two separate variables in scientific studies where the school administrator is taken as a variable.

Keywords:
Principal, deputy principal, teacher, metaphor

1. Introduction

Schools are among the most important formal education institutions and have significant duties and responsibilities in the education of society. School administrators have an important role and function in fulfilling these duties and responsibilities and achieving efficiency and success at schools. Leadership behaviours displayed by school administrators can influence staff, activate them, and ensure achieving more effective results (Akbaşlı, 2018). Administrators should provide direction, support, and guidance for the staff, praise their achievements, and reward them when necessary to realise their goals (Dogani, 2010). By constantly communicating with teachers, effective school administrators should take an active role in meeting the needs of the staff in regards to resources, encourage them to share knowledge, engage in innovations, and take risks (Şişman, 2012).

School principals, who play a key role in the development and improvement of schools, must also be good coordinators and catalysts (Balcı, 2014), and they need to have the ability to direct teachers in activities for the development and improvement of the school and bring about innovations by influencing them. According to Hoy and Miskel (2010), school principals are leaders who take an active role in realising school goals by bringing together all the required resources and influencing and striving to develop staff. In addition, deputy principals are also strategically important administrators in schools, just as the school principals. Deputy principals can also exhibit leadership behaviours by assuming important tasks and roles in the development

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[2]Corresponding author's address: Ministry of National Education, Bolu, Turkey
e-mail: koroglu522@hotmail.com

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and effectiveness of the school. The principals are not solely dominant in schools regarding administration, and there are other active players (Cerit, 2008). However, in most studies, the concept of the school administrator is perceived solely as the school principal, and the views of principals and deputy principals are assessed within the same framework in studies where the variable is the administrator. Deputy principals who undertake most of the administrative tasks at schools are expected to act as educational administrators in the education and training process, and the routine works are performed according to the legislation (Köse, 2018). Some of the studies conducted on school administration and management examine the issues directly related to school principals. S till some others conducted in the field of educational administration only include school principals as educational administrators by completely leaving out the deputy principals (Akçadağ, 2014; Aküzüm, 2017; Altın & Vatanartıran, 2014; Aslanargun & Bozkurt, 2012; Büte & Balcı, 2010; Memduhoğlu & Meriç, 2014; Yıldız & Ertürk, 2019). This fact shows that deputy principals are regarded to be more in the background as educational administrators. However, the concept of school administrator should not be perceived to include only principals; it should also incorporate deputy principals who fulfil important tasks in the school and lead teachers. The deputy principals should also be effective in managing the school as an educational administrator and routine tasks and formal correspondence. School principals should elevate the deputy principals' position to educational administrators by empowering deputy principals to use their knowledge, skills, and abilities to determine and implement the school policy and integrate the internal elements by giving deputy principals more voice (Özyılmaz, 2013). Therefore, how teachers perceive these concepts is very significant at this point. In this context, the metaphorical perceptions of teachers towards the concepts of principal and deputy principal were presented in a qualitative study. Metaphors are powerful and effective concept creation tools (Çelikten, 2006) that encourage administrators to form new ways of thinking and act following this thinking style. They can also be used to determine how staff perceives administrators.

Metaphors are very powerful mental tools (Saban, 2004) that enable the transfer of meaning from one object to another with perceptual similarity (Semerci, 2007) and ensure the structuring, directing, and controlling of ideas about the emergence and functioning of events. Metaphors, which provide the opportunity to shape incomprehensible evaluations, materialise abstract ideas and present information with new paradigms with a holistic approach (Jacobs & Heracleous, 2006), provide users with the opportunity to explain their activities and ideas (Draaisma, 2007), and are used in various fields of education such as educational administration, teaching, curriculum planning, and development (Döş, 2010). By offering different perspectives, metaphors provide a better understanding of organisations just like they provide a better grasp of daily life. Therefore, they are frequently used in organisational life as well (Balcı, 2008). Metaphors which are used as an important criterion in understanding the organisational systems of schools and evaluating the behaviours and roles of school administrators in educational administration (Balcı et al., 2011), are regarded as important tools that enable the determination of how administrators are perceived by employees (Yalçın & Erginer, 2012). In this context, how school principals and deputy principals, defined in the legislation as school administrators, are perceived by teachers is important in evaluating and directing their behaviour. The perceptions regarding principals and deputy principals can affect the quality of educational activities. The perceptions can lead to the continuation of positive behaviours and help eliminate negative behaviours. Negative perceptions will contribute to behaviour change in administrators. Linn et al. (2007) emphasised that how something appears is not important; how something is perceived is important and questioned "whether the task/job shapes the perception or the perception shapes the task/job?" in preparing the future education leaders.

While perception emerges after actions strengthens the view that work shapes perceptions, the existence of mutual interaction must be accepted. In addition, teachers' attribution of similar or different meanings to the principal and deputy principal concepts will be a very important contribution to literature. As mentioned before, some previous studies focused only on principals by excluding deputy principals regarding administrators. In contrast, some others evaluated the views of principals and deputy principals in the same context. However, the administrative perspectives of the principals and deputy principals may differ. Combining both concepts under the school administrator variable and providing interpretations based on this combination may lead to errors in research. Therefore, how teachers perceive these concepts is rather significant. The literature review encountered no previous studies investigating the concepts of principals and deputy principals in the same context. In addition, it is believed that the present study will contribute to the literature, researchers, and practitioners by providing clues about the principals' and deputy principals' administration beliefs as school administrators and how the schools are managed. In this sense, the study

aimed to comparatively present the meanings attributed to the concepts of principal and deputy principal by teachers and the differences between these concepts by seeking answers to the following questions:

- What are the metaphoric perceptions of teachers on the principal concept?
- What are the metaphoric perceptions of teachers on the deputy principal concept?
- What are the similarities and differences between teachers' metaphoric perceptions on principal and deputy principal concepts and the conceptual categories formed by these metaphors?

2. Methodology

2.1. Research Model

This qualitative research was designed as a case study, one of the qualitative research methods. The qualitative research method is used when it is desired to obtain in-depth and comprehensive information on a subject (Patton, 2014). On the other hand, the case study offers researchers the opportunity to examine the data they obtain in a specific context closely and enables the investigation and revealing of the holistic and meaningful features of real events (Creswell, 2007; Yin, 2003). In this context, teachers' views on the principal and deputy principal concepts were examined in-depth, and the difference between these two concepts was presented.

2.2. Research Group

The study group in this research consisted of 289 teachers employed at nine public primary schools, nine public secondary schools, and seven public high schools (general, vocational, and technical). The convenience sampling method was used to identify the study group to ensure speed and practicality in line with the research method. 55.4% of the teachers in the study group were female (n = 160) and 44.6% were male (n = 129). 36.7% of the teachers taught in primary schools (n = 106), 32.5% in secondary schools (n = 94), and 30.8% in high schools (n = 89).

2.3. Data Collection Tools and Data Analysis

The interview method was used to collect data in the study. A semi-structured interview form, often used in metaphor studies in the literature and prepared according to the research topic, was used as a data collection tool. The form asked teachers to complete the following sentences: *"The principal is ....., because ....."* and *"The deputy principal is ....., because ..."*. The metaphors created by the participating teachers were analysed by content analysis, one of the qualitative research methods. Content analysis can be defined as encoding and digitising what is said and written according to specified criteria. In other words, content analysis is used to organise and interpret similar data within the framework of certain categories and themes, in a way that the reader can understand (Balcı, 2015; Yıldırım & Şimşek, 2013). In this context, in line with the teachers' explanations, the metaphors with similar features were grouped, and the metaphors divided into groups were named within the literature framework and divided into conceptual categories.

2.4. Validity and Reliability

Validity and reliability are important concerns in any study regardless of the research design. These concepts cover the theoretical framework of the research, data collection, analysis and interpretation of data, and presentation of findings (Merriam, 2013). Within the scope of validity, the data collected with the semi-structured interview form were examined comprehensively. It was determined that 96 metaphors were developed for the principal concept and 84 for the deputy principal concept. The categories represented by these metaphors were identified, and all metaphors were included in the findings section. 2 experts (lecturers) were consulted to determine whether the metaphors collected under 12 categories for the principal and deputy principal concepts represented a conceptual category. The experts were provided with the list of metaphors and the names of the categories to ensure reliability. Experts were asked to place the metaphors into those categories. The matches made by researchers and experts were compared, and it was found that 4 metaphors were placed in different categories by experts compared to the placement of the researchers. According to the reliability calculation found by using the formula of Miles and Huberman (1994), (reliability = consensus / consensus + disagreement x100), the reliability of the research was determined as 91% (Reliability = 100 / (100

+ 4) x100 = 0.96). The 4 metaphors on which there was a disagreement were re-examined with the experts, reaching a consensus. A reliability of 0.90 and above is sought in qualitative research (Saban, 2009). Accordingly, it can be argued that the reliability of this research was sufficient.

2.5. Ethical

This research was examined in the Ethics Committee of Human Studies in Social Sciences at Bolu Abant Izzet Baysal University and was found ethically appropriate.

3. Findings

3.1. Metaphors Produced for the "Principal" Concept

Table 1 below represents the 96 metaphors developed by teachers for the concept of the school principal.

Table 1. *The Metaphors Developed by Teachers for the Concept of Principal*

Metaphor	*f*	Metaphor	f	Metaphor	*f*
The leader	9	Organiser/regulator	4	Umbrella	2
Garrison commander	7	Pedal	4	The heart	2
The heart	7	Brain	4	Computer tower	2
The king of the jungle	6	The mother	4	The sun	2
Maestro	6	Police	3	Control desk	2
Candle	6	Team captain	3	Queen bee	2
Steering wheel	6	The father	3	Locomotive	2
Traffic cop	6	Gear	3	Camera	2
Team captain	6	Spark	3	Motherboard	2
Employee	6	Power distribution unit	3	Tree	2
Lamp	5	Microprocessor	3	Commander	1
Antibiotic	5	Wishing tree	3	Shipmaster	1
Leader	5	Mediator	3	Pioneer	1
Technical director	5	Shoe	3	Monitor	1
The mother	5	Imam	3	Landlord	1
Brain	5	The head of the household	3	Car engine	1
Organizer/regulator	5	The bell	3	Keystone	1
Beacon	5	The father	3	Stress	1
Mirror	5	Player	3	Official position	1
Framework	5	Foundation of the building	3	Technical director	1
Steel vest	4	Arbitrator	3	Brain	1
Shipmaster	4	The mother	3	Blue whale	1
Driver	4	Tree bark	3	The head of the household	1
Maestro	4	The heart	3	Organizer/regulator	1
Key	4	Lion	3	The pen	1
Brain	4	Eye	2	The moon	1
Locomotive	4	Circulation pump	2	Cogwheel	1
Light	4	Processor	2	Shield	1
The future	4	Traffic cop	2	Water	1
The father	4	The mother	2		
Records-keeper	4	Mountain of ego	2	Total	289

Table 1 shows that teachers mostly associated the principal with the following metaphors: leader (9), garrison commander (7), the heart (7), the king of the jungle (6), conductor (6), candle (6), steering wheel (6), traffic police (6), team captain (6), and employee (6). Some metaphors, such as leader, mother, father, etc., were

included more than once in Table 1 because the same metaphors were expressed by teachers for different categories.

3.2. Conceptual Categories Developed from Teachers' Metaphors for the Concept of Principal and Metaphors in These Categories

The 96 metaphors developed by teachers for the concept of principal were collected under 12 conceptual categories. Table 2 below presents these categories and the metaphors included in them.

Table 2. *Conceptual Categories Developed from Teachers' Metaphors for the Concept of Principal and Metaphors in These Categories*

Categories	Metaphors
Metaphors Included in "The Principal as the Leader-Guide" Category	Leader (f=9), team captain (f=6), steering wheel (f=6), maestro (f=6), technical director (f=5), brain (f=5), organizer/regulator (f=5), locomotive (f=4), shipmaster (f=4), driver (f=4), imam (f=3), traffic cop (f=2), queen bee (f=2).
Metaphors Included in the Principal as the Unifier Category	Framework/skeleton (f=5), the mother (f=5), the father (f=4), team captain (f=3), foundation of the building (f=3), shoe (f=3), player (f=3), computer tower (f=2), umbrella (f=2), locomotive (f=2), tree (f=2), keystone (f=1), landlord (f=1), pioneer (f=1).
Metaphors included in the Principal as the Authoritarian Leader Category	Garrison commander (f=7), the king of the jungle (f=6), the mother (f=3), the bell (f=3), the father (f=3), mountain of ego (f=2), the pen (f=1), brain (f=1), blue whale (f=1).
Metaphors included in the Principal as the Organiser/Regulator Category	Traffic cop (f=6), brain (f=4), maestro (f=4), organizer/regulator (f=4), arbitrator (f=3), heart (f=2), motherboard (f=2), shipmaster (f=1).
Metaphors included in the Principal as the Expert (with the power of knowledge) Category	Candle (f=6), beacon (f=5), lamp (f=5), light (f=4), the sun (f=2).
Metaphors included in the Principal as the Protector Category	The mother (f=4), steel vest (f=4), tree bark (f=3), the father (f=3), lion (f=3), the head of the household (f=3), shield (f=1).
Metaphors included in the Principal as the Problem Solver Category	Leader (f=5), antibiotic (f=5), key (f=4), mediator (f=3), microprocessor (f=3).
Metaphors included in the Principal as the Supervisor Category	Brain (f=4), police (f=3), the mother (f=2), camera (f=2), control desk (f=2), the head of the household (f=1), technical director (f=1), commander (f=1).
Metaphors included in the Principal as the Energiser/Mobiliser Category	Pedal (f=4), gear (f=3), spark (f=3), the heart (f=3), cogwheel (f=1), car engine (f=1).
Metaphors included in the Principal as the Distributor-AllocatorCategory	The heart (f=7), power distribution unit (f=3), circulation pump (f=2), processor (f=2), organiser/regulator (f=1),
Metaphors included in the Principal as the Reflector Category	Mirror (f=5), eye (f=2), the moon (f=1), water (f=1), monitor (f=1).
Metaphors included in the "Other" Category	Employee (f=6), records-keeper (f=4), the future (f=4), wishing tree (f=3), official position (f=1), stress (f=1).

According to Table 2, the noticeable and striking metaphors in conceptual categories can be summarised as follows: Leader (f= 9), brain (f= 5), and shipmaster (f= 4) in "The Principal as the Leader-Guide" Category; framework/skeleton (f= 5) and umbrella (f= 2) in the "Principal as the Unifier" Category; the king of the jungle (f= 2) in the "Principal as the Authoritarian Leader" category; maestro (f= 4) and motherboard (f= 2) in the "Principal as the Organizer/Regulator" category; candle (f= 6) and light (f= 4) in the "Principal as the Expert (with the power of knowledge)" category; steel vest (f= 4), tree bark (f= 3), lion (f= 3) and shield (f= 1) in the "Principal as the Protector" category; antibiotic (f=5) in the "Principal as the Problem Solver" category; camera (f= 2) in the "Principal as the Supervisor"category; pedal (f= 4), gear (f= 3) and spark (f= 3) in the "Principal as the Energiser/Mobiliser" category; the heart (f= 7), power distribution unit (f= 3) and processor (f= 2) in the "Principal as the Distributor-Allocator" category; mirror (f= 5) and the moon (f= 1) in the "Principal as the

Reflector" category and the records-keeper (f= 4), the future (f= 4) and stress (f= 1) in the "Other" category. The teachers' views, used to identify these metaphors, can be found below as direct quotes:

Leader: "The principal is a leader who guides teachers at school, who should guide them in what they should do" (T72).

Brain: "Just as the brain directs people, the principal has to fulfil this task in the school" (T2).

Shipmaster: "The seas are sometimes calm and sometimes are wavy. In schools, teachers may not decide what to do in some situations. In such cases, the principal directs the teachers and guides them" (T210), "The principal is the person who guides the crew and the ship and ensures reaching the target" (T66).

Framework: "Just like the skeleton which has the ability to unite all the different bone structures in the body, the principal should have the ability to unify teachers with different abilities and personalities" (T212).

Umbrella: "The principal should act like an umbrella, he/she should keep all the staff together, he/she should be unifying" (T50), Umbrella: "He/she has to gather all staff under his/her wings" (T115).

The king of the jungle: "The principal is the top administrator in the school; he/she is the authority" (T278).

Maestro: "The tasks of the maestro, who combines different instruments and produces a harmonious music, is undertaken by the principal, who ensures that the teachers work regularly in the school and ensures an efficient working environment" (T206).

Motherboard: "It would be difficult to maintain order in the school without the principal" (T1).

Candle: "Radiates as much as his/her knowledge and skills" (T16).

Light: "Just like the light has the power of luminosity, the principal has the power of expertise that expresses his/her knowledge and skills" (T12).

Steel vest: "Steel vest has protective properties. The principal should protect his/her teachers against problems like a steel vest" (T14).

Tree bark: "The principal must surround and protect school staff like a tree bark" (T107).

Lion: "He/she is the guardian of where he/she is located" (T201).

Shield: "He/she protects the school and teachers against all kinds of negativity" (T244).

Antibiotic: "As antibiotics are used in the treatment of various diseases, the principal undertakes the role of antibiotics in solving the problems at school. He/she understands and resolves problems" (T193).

Camera:" He/she monitors and controls all the events and all tasks in the school" (T285).

Pedal: "He/she puts the school wheel in motion" (T17).

Spark: "The principal initiates the execution of school affairs" (T37).

Gear: "When he/she talks, all the staff acts, starts doing their jobs" (T12).

The heart: "When the heart does not work, that creature perishes. The principal is the centre of the school's functions. He/she distributes and allocates the duties to the deputy principals" (T111).

Power distribution unit: "He/she ensures the distribution of all school-related tasks" (T57).

Processor: "He/she distributes tasks, shares the tasks" (T33).

Mirror: "The school reflects the characteristics of its principal" (T253).

The moon: "Reflects the acquired knowledge and skills to his/her teachers" (T133).

Monitor: "He/she observes our work, reflects information about our work" (T52).

Records-keeper: "He/she keeps dealing with paperwork, doesn't do anything else" (T260).

The future: "The future of the school depends on the principal. The principal is the future for the school" (T286).

Stress: "He/she bothers us. He/she exaggerates trivial things at school, creates tension" (T100).

3.3. The Metaphors Developed for The Concept of Deputy Principal

Table 3 below lists the 84 metaphors produced for the concept of "deputy principal" according to teachers' perceptions.

Table 3. *The Metaphors Developed by Teachers for the Concept of Deputy Principal*

Metaphor	*f*	Metaphor	*f*	Metaphor	*f*
Porter	13	Umbrella	4	Vizier	2
Bridge	13	Vacuum cleaner	4	Adhesive	2
Bee	10	Organizer/regulator	4	Gram	2
Employee	9	Chain	4	Orderly	1
Traffic sign	9	Compass	4	Doctor	1
Robot	8	Traffic sign	4	Shoelace	1
Scales	7	Assistant	3	Company commander	1
Drummer of the orchestra	6	Sibling	3	Adjustable wrench	1
Sergeant	6	Uncle	3	Horse	1
Messenger	6	Motherboard	3	Moving leg of the caliper	1
The guide	6	Dolphin	3	Unqualified employee	1
Band-aid	5	Motor	3	Assistant	1
The mother	5	Assistant	3	Artery	1
LabourLabourer	5	The mother	3	Mediator	1
Shepherd	5	Wind	3	Operating system	1
Organizer/regulator	5	Wave	3	Assistant	1
The clock	5	The mother	3	Push button	1
Coach	5	Neuron	3	Operating system	1
Navigation	5	The heart	3	Cerebellum	1
Rainbow	5	Assistant	3	Hinge	1
Qualified employee	4	Bridge	3	Postman	1
Muezzin	4	The father	3	Power	1
Advisor	4	Friend	2	Folder	1
Joker	4	Number two man	2	Pilot	1
Car wheel	4	Key	2	Chief	1
Alarm clock	4	Fixer	2	Bee	1
Alarm	4	Pasha	2		
Friend	4	Running water	2		
Flag	4	Sibling	2	Total	289

According to Table 3, teachers developed 84 metaphors for the concept of "deputy principal". Teachers mostly expressed the concept of deputy principal with the following metaphors: porter (f= 13), bridge (f= 13), bee (f= 10), employee (f= 9), traffic sign (f= 9), robot (f= 8), scales. (f= 7), drummer of the orchestra (f= 6), sergeant (f= 6), messenger (f= 6), and the guide (f= 6). Although the metaphors produced by teachers for the concept of deputy principal were generally positive, negative metaphors were also identified (such as porter (f= 13), labour labourer (f= 5), number two man (f= 2), orderly (f= 1), unqualified employee (f=1). Bridge (f= 13), band-aid (f= 5), navigation (f= 5), joker (f= 4), umbrella (f=4), and adhesive (f= 2) metaphors were found to be noteworthy.

3.4. Conceptual Categories Developed from Teachers' Metaphors for the Concept of Deputy Principal and Metaphors in These Categories

84 metaphors developed by teachers for the concept of deputy principal were collected under 12 conceptual categories. Table 4 below presents these categories and the relevant metaphors.

Table 4. *Conceptual Categories Developed from Teachers' Metaphors for the Concept of Deputy Principal and Metaphors in These Categories*

Categories	Metaphors
Metaphors included in the Deputy Principal with a Heavy Workload Category	Porter (f=13), bee (f=10), employee (f=9), labourlabourer (f=5), operating system (f=1).
Metaphors Included in the Deputy Principal as the Leader-Guide Category	Traffic sign (f=9), the guide (f=8), navigation (f=5), coach (f=5), muezzin (f=4), advisor (f=4), compass (f=4).
Metaphors Included in the Deputy Principal Who Undertakes All Tasks/ Constantly Works Category	Robot (f=8), the clock (f=5), qualified employee (f=4), joker/wildcard (f=4), the mother (f=3), assistant (f=3), fixer (f=2), running water (f=2), horse (f=1), bee (f=1), orderly (f=1), unqualified employee (f=1).
Metaphors Included in the Deputy Principal as the Communication Provider-Link Builder Category	Bridge (f=13), messenger (f=6), traffic sign (f=4), organizer/regulator (f=4), assistant (f=1), mediator (f=1).
Metaphors Included in the Deputy Principal as the Unifier Category	Rainbow (f=5), friend (f=4), chain (f=4), flag (f=4), umbrella (f=4), bridge (f=3), adhesive (f=2), hinge (f=1), folder (f=1).
Metaphors Included in the Deputy Principal as the Energiser Category	Alarm clock (f=4), alarm (f=4), car wheel (f=4), wind (f=3), wave (f=3), motor (f=3), push button (f=1), pilot (f=1), power (f=1).
Metaphors Included in the Deputy Principal as the Organiser Category	Drummer in the orchestra (f=6), organiser/regulator (f=5), vacuum cleaner (f=4), the heart (f=3), assistant (f=3), operating system (f=1), moving leg of the caliper (f=1), company commander (f=1).
Metaphors Included in the Deputy Principal as the Protector Category	The mother (f=5), shepherd (f=5), dolphin (f=3), sibling (f=3), the father (f=3), friend (f=2).
Metaphors Included in the Deputy Principal as the Number Two Man Category	Sergeant (f=6), uncle (f=3), number two man (f=2), pasha (f=2), vizier (f=2).
Metaphors Included in the Deputy Principal as the Problem Solver Category	Band-aid (f=5), assistant (f=3), key (f=2), adjustable wrench (f=1), shoelace (f=1), doctor (f=1).
Metaphors Included in the Deputy Principal the Equilibrator Category	Scales (f=7), sibling (f=2), gram (f=2), assistant (f=1), cerebellum (f=1).
Metaphors Included in the Deputy Principal as the Distributor-Allocator Category	Neuron (f=3), the mother (f=3), motherboard (f=3), postman (f=1), chief (f=1), artery (f=1).

According to Table 4, the noticeable and striking metaphors in conceptual categories can be summarised as follows: Porter (f= 13), bee (f=10), employee (f=9) and labourlabourer (f=5) in the "Deputy Principal with a Heavy Workload" Category; traffic sign (f= 9), navigation (f= 5) and compass (f= 4) in the "Deputy Principal as the Leader-Guide" Category; joker/wildcard (f= 4) in the "Deputy Principal who Undertakes All Tasks/ Constantly Works" category; bridge (f= 13) and ambassador (f= 6) in the "Deputy Principal as the Communication Provider-Link Builder" category; rainbow (f= 5),flag (f= 4), umbrella (f= 4) and adhesive (f= 2) in the "Deputy Principal as the Unifier" category; wind (f= 3) and wave (f= 3) in the "Deputy Principal as the Energizer" category; vacuum cleaner (f=4) in the "Deputy Principal as the Organiser" category; shepherd (f=5) in the "Deputy Principal as the Protector" category; band-aid (f= 5) and doctor (f=1) in the "Deputy Principal as the Problem Solver" category; scales (f=7) and gram (f=2) in the "Deputy Principal the Equilibrator" category and postman (f=1) and artery (f=1) in the "Deputy Principal as the Distributor- Allocator" category. The teachers' views, used to identify these metaphors, can be found below as direct quotes:

Porter: "He/she carries all the burden of the school" (T30).

Bee: "Just as making honey is hard work, the workload of the deputy principal is like that of a bee. He/she has many tasks" (T39).

Labourer: "He/she carries the workload, his/her responsibility is too much, his/her workload is too much, he/she is struggling to keep up with all these" (T20).

Traffic sign: "Traffic signs guide us in traffic. And at school, the deputy principal tells us what and how to do it, he/she guides us" (T118).

Navigation: "He/she guides teachers in their success, leads them" (T208).

Compass: "Just like the compass helps us find our direction, the deputy principal guides and leads teachers" (T136).

Joker: "When necessary, they undertake the role and responsibility of security guards, teachers, officers, administrators and attendants" (T26).

Bridge: "He/she provides communication between teachers and the principal, helps parent-teacher communication in some cases" (T93).

Messenger: "In negative circumstances at schools, teachers sometimes don't talk to each other. In this case, he/she provides communication between people" (T277).

Rainbow: "Just as the rainbow combines different colours, the deputy principal unites teachers and employees with different views and personalities and tries to keep them together" (T79).

Flag: "Nations are united under one flag. The deputy principal also plays an important role in ensuring that his/her staff act in unity" (T55).

Wind: "When he/she talks, all teachers take action. Just like the wind moving all the leaves" (T213).

Vacuum cleaner: "He/she does all the work of the school, arranges things, tidies things up whether they are necessary and important or not" (T11).

Shepherd: "They do not want their staff to be harmed by others" (T212).

Band-aid: "He/she is solution-oriented, therapeutic" (T48).

Doctor: "He/she removes and treats distressing situations between parents, teachers, students and the principal" (T252).

Adjustable wrench: "He/she solves problems in most cases even when he/she does not have the authority" (T140).

Scales: "He/she maintains balance between the administration, teachers and students" (T15).

Gram: "Gram establishes the balance in shopping. The deputy principal is also a balance factor in the school" (T1).

Postman: "He/she distributes duties, allocates duties" (T62).

Artery: "Like an artery, he/she ensures that information is sent to all school staff" (T40).

3.5. Similar Metaphors Developed for the Concept of Principal and Deputy Principal

It was identified that the metaphors for principal and deputy principal concepts such as employee, the mother, organiser, coach (technical director), the heart, key, the father, mediator, and motor were similar.

3.6. Similar Conceptual Categories Formed by the Metaphors Developed for the Concepts of Principal and Deputy Principal

The following categories formed according to the metaphors developed by teachers in regards to the concepts of principal and deputy principal were identified to be similar: "Leader-Guide", "Unifier", "Organiser/Regulator", "Protector", "Problem Solver", "Energiser/Mobiliser", and "Distributor-Allocator". In other words, it was identified that these categories were formed from metaphors developed for both principals and deputy principals and represented both concepts equally.

3.7. Different Metaphors Developed for the Concepts of Principal and Deputy Principal

It was determined that teachers produced 69 different metaphors for the concept of principal and 71 different metaphors for the deputy principal. It was a noteworthy finding that most of the metaphors developed for the concepts of principal and deputy principal were different.

3.8. Different conceptual categories formed by the metaphors developed for the concepts of principal and deputy principal

It was concluded that the conceptual categories formed by teachers' metaphors on the concept of principal and deputy principal were different regarding principals. The differentiated categories included "the Principal as the Authoritarian Leader", "the Principal as the Expert" (with the power of knowledge), "the Principal as the Supervisor", and "the Principal as the Reflector". Whereas the differentiated conceptual categories in regards to deputy principals included the "Deputy Principal with a Heavy Workload", "the Deputy Principal Who Undertakes All Tasks/Constantly Works", "the Deputy Principal as the Communication Provider-Link Builder", "the Deputy Principal as the Number Two Man", and "the Deputy Principal the Equilibrator".

4. Conclusion and Discussion

According to the results of this research, teachers produced 92 metaphors to express the concept of principal and mostly used *leader, garrison commander, the heart, the king of the jungle, maestro, candle, steering wheel, traffic cop, team captain, employee,* and *guide* metaphors. The metaphors produced by teachers regarding the concept of principal were generally positive. This finding may point to the fact that teachers experienced positive perceptions regarding school principals and that school principals implemented a good management style in school management. G*arrison commander, records-keeper, mountain of ego, camera, stress,* and *the bell* were the negative metaphors regarding the concept of principal. Negatively expressed metaphors may be pointing to the fact that principals have adopted an authoritarian and strictly controlling management style. In this context, it can be argued that teachers regarded school principals' authoritarian and tightly controlled behaviours negatively. Positive results in such studies regarding the perception of the school principal can positively strengthen the image of principals. In contrast, the negative results will allow them to reconsider and regulate themselves (Yalçın & Erginer, 2012). Therefore, it can be thought that the emergence of negative metaphors is also important for school principals to renew themselves. Because it can be argued that today's organisations require not only leadership or administration skills but also leader administration in which the two qualities are integrated. School principals are expected to be leading administrators and the necessary official authorities equipped with leadership skills such as influencing and directing. When formal authority is combined with leadership skills, the strength and performance of school principals will increase.

The metaphors produced by teachers for the concept of principal are grouped into 12 conceptual categories: the principal as the leader-guide, the principal as the unifier, the principal as the authoritarian leader, the principal as the organiser/regulator, the principal as the expert (with the power of knowledge), the principal as the protector, the principal as the problem solver, the principal as the supervisor, the principal as the energiser/mobiliser, the principal as the distributor-allocator, the principal as the reflector and other. Among these categories, teachers expressed the principal concept *as the leader-guide category* the most, while they used *the principal as the reflector category* the least. Some of the metaphors representing the *leader-guide* category were found to be *leader, team captain, steering wheel, maestro, technical director, brain, organiser, locomotive, shipmaster,* and *driver*. Similarly, the following metaphors were found for school administrators in different studies: *the leader* (Browne-Ferrigno, 2003); *maestro* (Monroe, 2003); *traffic cop, locomotive, team captain, coach, compass, maestro* in the leader-guide category (Dönmez, 2008); *shipmaster, compass, driver* and *technical director* in the leader-guide category (Aydoğdu, 2008); *guide, organiser, writer, wind, conductor, bus driver, remote control, locomotive, leader, father, scout, machinist,* and *team captain* in leader-guide category (Köstereliođlu, 2014), and *coach, ship captain, team captain* and *locomotive* in the school principal as a leader/guide category. The fact that the concept of the school principal is expressed by teachers the most as leader-guide brings the leadership roles of school principals to the fore. Leadership is among the most important tasks of school principals (Briggs, 2005; Loder and Spillane, 2005). School principals should be able to lead teachers and students and have the ability to interact with stakeholders inside and outside the education system. When schools are considered organisations where change and development occur, school principals have a key role in designing, monitoring, and evaluating this change and development (Mestry & Grabler, 2004). As leaders, principals should be able to guide and support teachers in distance/online education and improve their technological competence -recently a very important area in the light of new developments- so that schools will be more effective and adapt to global developments. School principals strive to increase the quality of educational activities, organise human and material resources in the school, help and guide teachers and

students when necessary (Cerit, 2008). Therefore, it can be claimed that one of the most important features of school principals is leadership skills.

Framework/skeleton and *umbrella* were the noteworthy metaphors encountered in the principal as the unifier category; *candle, beacon, lamp, light* and *the sun* were important findings in the principal as the expert (with the power of knowledge) category; s*teel vest, tree bark* and *shield* were important metaphors in the principal as the protector category; *antibiotic* and *key* were significant metaphors in the principal as the problem solver category while *pedal, gear, spark,* and *cogwheel* attracted attention in the principal as the energiser/mobilise category; and *the heart, power distribution unit* and *circulation pump* were noteworthy in the principal as the distributor-allocator category. School principals should be unifying and integrating. Since many activities carried out in schools require teamwork (Ertürk & Argon, 2019), school principals' ability to keep teachers and other stakeholders together is regarded to be very important in terms of the school's effectiveness and efficiency of the educational activities and student achievement. School principals play a key role at schools. They should adopt a management style that unifies all stakeholders without discrimination to ensure the continuity of harmony and activities in the school by bringing all stakeholders together. At the same time, school principals should have the necessary expertise to contribute to teachers' professional development, inform them about the knowledge, skills, and competencies required by the era, and guide them in this context. Administrators who have the power of expertise in organisations can influence their staff more easily, and employees can be more willing to fulfil administrators' requests with such power. In addition, administrators with specific knowledge, skills, and experiences are perceived as reliable and credible people (George & Jones, 2008; Schermerhon et al.,2011). Therefore, administrators who have the knowledge, skills, and expertise required by educational administration at schools will easily meet the needs of teachers, contribute to their development, and be reliable and credible in the eyes of their staff.

Moreover, the administrator's expertise will make it possible to influence the teachers and therefore contribute to their willingness to carry out school activities more efficiently. This can be considered as a very important aspect for the future of the school. The protective characteristics of school principals are also important. The school principals should protect the school stakeholders like a shield or steel vest, be with them in the face of incidents, and protect their staff just like a bark protects the tree. School principals should also have the ability to solve problems that may arise at school. Teachers also see their principals as problem solvers, and they expect principals to solve problems that they encounter. When problems are not solved, they can negatively affect teachers' productivity and the school climate. Today, the management of schools needs more effort, cooperation, and exchange of ideas than ever. Therefore, it is argued that it will be difficult for school principals to manage the school independently.

According to the research results, the teachers produced 84 metaphors for the concept of deputy principal. They explained this concept mostly with the following metaphors: *porter, bridge, bee, employee, traffic sign, robot, scales, orchestra drummer, sergeant,* and *messenger*. The fact that the deputy principal is mostly compared to *porter* by teachers shows that the workload of deputy principals is indeed quite high. In this context, the workload of the school should be equally distributed among all administrators, and the deputy principals should have time to fulfil their administrative and leadership roles. Deputy principals are also defined as administrators. Therefore, bureaucratic tasks in schools should be fulfilled by clerks to reduce the workload of deputy principals and to provide them with time to devote to educational/instructional leadership opportunities. Thus, the waste of human resources in this field can be prevented by ensuring that deputy principals who are educators do not simply work as office clerks (Köse, 2018). However, since not every school has enough clerks to carry out bureaucratic tasks, these duties should be divided equally among all administrators.

Teachers generally used positive metaphors for deputy principals. However, the metaphors such as *porter, labourer, number two man, orderly,* and *unqualified employee* were negative metaphors. However, these metaphors were not directed at deputy principals themselves or their management styles; it can be argued that these metaphors were related to the task, workload, and the order of importance of the specified tasks. *Bridge, band-aid, navigation, joker, umbrella, rainbow,* and *adhesive* were found to be remarkable metaphors produced for the concept of deputy principals because quite different from the metaphors produced for the concept of principals, these metaphors pointed to a deputy principal profile that combined, unified, provided guidance, solved problems, and led teachers. In this respect, it can be argued that the duties of deputy principals at school and the teacher's expectations do not exactly match.

The metaphors produced by teachers for the concept of deputy principals were collected under 12 conceptual categories. Teachers expressed the concept of deputy principal mostly with the following categories: The deputy principal with a heavy workload, the leader/guide, undertakes all tasks/constantly works. In comparison, they expressed the concept of deputy principal the least with the "The deputy principal as the distributor/allocator" category. It can be argued that most of the metaphors that teachers developed for the concept of deputy principal emphasised their leadership characteristics because the metaphors mostly emphasised leadership (e.g. guiding, mobilising, organising, problem-solving, ensuring communication, and distributing/allocating). These results can be interpreted to mean that teachers expected deputy principals to lead more in educational activities. Wholehearted devotion of school employees to their work and exhibiting extra role-oriented behaviours, adoption of the school by all its members and stakeholders, students' affection towards the school and their willingness to attend it, and showing that school is life itself through educational studies on life requires administrators to have leadership competencies and fulfil these duties effectively (Köse, 2018). Therefore, deputy principals should fulfil their duties and roles as educational administrators in schools within the scope of leadership behaviours. This opportunity should be offered to them.

The heavy workloads of the deputy principals might have resulted in the metaphors such as *porters, bees* and *labour*. Most of the bureaucratic tasks are undertaken at schools by deputy principals. It can be argued that the use of *navigation* and *compass* in the category of deputy principal as the leader/guide; *rainbow, chain, flag, adhesive* and *hinge* in the category of the deputy principal as the unifier; *wind* and *wave* metaphors in the category of the deputy principal as the energiser/mobiliser; and *band-aid* and *doctor* metaphors in the deputy principal as the problem solver category emphasised the characteristics of deputy principals in influencing, activating, guiding, joining, and directing teachers around a goal or showed that teachers had these expectations from deputy principals. Influencing the group and the group activities towards achieving the goals, activating, directing, being effective, building strong and goal-oriented teams (combining around a goal), and problem-solving are among the features that form the basis of leadership (Lunenburg and Orntein, 1996). The deputy principal as the communication provider-link builder brings the instructional leadership capacity of the deputy principals to the fore because effective school administrators strive to provide effective communication with all school stakeholders. They also make efforts for planning instruction and realisation of these planned instructional activities. They are successful in effective listening, understanding in-group relationships, and empathising (Sezgin, 2016). For this reason, the perception of deputy principals following these manners or expectations may be important for the efficiency and productivity of schools, therefore increasing the quality of education in schools.

There are similarities and differences in the metaphor perceptions of teachers regarding the concepts of principal and deputy principal. The metaphors *employee, the mother, organiser, coach (technical director), the heart, key, the father, mediator,* and *motor* were similar metaphors produced for the principal and deputy principal concepts. Accordingly, it can be argued that both principals and deputy principals had common characteristics or were expected to have common characteristics regarding working on behalf of the school, guiding, mobilising, and solving the problems that arise.

Teachers produced 69 different metaphors for the concept of principal and 71 different metaphors for the concept of deputy principal. It was interesting to note that most of the metaphors produced for principal and deputy principal concepts were different. There were distinct and important differences between these concepts. This result shows that the perceptions of teachers towards both concepts were highly differentiated. For this reason, evaluating these two concepts together by combining them under the variable of administrator in research studies may cause errors. Hence, it will be useful to consider and evaluate these two concepts separately in scientific research.

The present study found similarities and differences between the conceptual categories formed from the metaphors produced by teachers for the concepts of principal and deputy principal. The similar conceptual categories were as follows: leader-guide, unifier, organiser/regulator, protector, problem solver, energiser/mobiliser, and distributor/allocator. Leadership characteristics of school administrators are of great importance in ensuring the effectiveness of the school (Balcı & Pehlivan-Aydın, 2003). Therefore, the fact that the leadership abilities of principals and deputy principals were more prominent, or these categories were similar in both concepts is promising for the future. It is also beneficial for education's quality, effectiveness, and efficiency to ensure harmony in schools, train, and increase teachers' competencies, solve problems, and

share information, education, and training activities. Additionally, this similarity that highlighted the leadership roles of both principals and deputy principals is vital because providing them with opportunities to train and educate themselves within the scope of education and school leadership will be instrumental for developing the school, stakeholders, and community.

A difference was identified between principal and deputy principal concepts based on teacher perceptions; the conceptual categories formed by teachers' metaphors differentiated in the authoritarian, expert (possesses the power of knowledge), supervisor, and reflector categories. Additionally, they were differentiated for the concept of deputy principal in having a heavy workload, undertaking all tasks/ constantly working, providing communication-building links, being the number two man, and being an equilibrator. In other words, authoritarian, regulatory, expert, supervisory, and reflective principal categories were not among the categories created by the metaphors produced for the concept of the deputy principal. Similarly, the categories formed by the metaphors crated for deputy principals were not included among those developed for the principal concept. Therefore, according to teacher views, the difference between these two concepts is high and significant. Deputy principals ensure cohesion and reconciliation between stakeholders and organise educational activities (Köse, 2018). School principals want to influence internal and external stakeholders. They can achieve this goal with the help of deputy principals they can trust and cooperate with; therefore, they want to work with deputy principals with whom they can be reliable, hardworking, and collaborative (Bursalıoğlu, 2012). In this sense, the findings of this study stated that deputy principals were perceived as leaders-guides, unifiers, energisers, regulators, problem-solvers, protectors, distributors/allocators, equilibrators, communication providers-link builders and that they are expected to carry these qualities to make it easier for the principals. It will also increase the quality of educational activities that will help them influence the elements in their internal and external environment and thus increase the quality of education. Administrators' leadership affects the learning climate, professionalism level, teacher commitment, student achievement, and teachers' morale in schools (Korkmaz, 2005). School principals may not be successful in educational leadership on their own. For this reason, deputy principals should also be regarded as educational leaders in schools, and their knowledge and skills should be utilised. Özyılmaz (2013) stated that deputy principals should be effective in school administration and the formal correspondence of the school and routine tasks.

5. Recommendations

In line with the results of the research, the following suggestions are presented to researchers and practitioners:

- The emergence of similar conceptual categories that highlight leadership derived from metaphors produced for the principal and deputy principal concepts necessitates the development of leader administrator competencies within the scope of education and school leadership of principals and deputy principals.
- The metaphors developed by teachers for the principal and deputy principal concepts and the conceptual categories derived from these metaphors indicated a significant and high level of difference between these two concepts. Therefore, they need to be addressed separately in studies that focus on principals' and deputy principals' training and in-service training while identifying relevant competency areas. These two concepts should be addressed as two separate variables in scientific studies, especially when school administrators are taken as variables.

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Positive Characteristics in Primary School Teachers: The Interactive Roles of Psychological Capital and Mindfulness in Teaching

Meltem ASLAN GÖRDESLİ[1], Zeynep AYDIN SÜNBÜL[2]

[1]*School of Education Istanbul Medipol University, Istanbul, Turkey* *0000-0002-9989-9516*

[2] *School of Education Kocaeli University, Kocaeli, Turkey* *0000-0001-8084-2344*

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ABSTRACT

The reinforcing effects of positive characteristics in maintaining teachers' and students' psychological health have been well documented. However, there has been very little research into the determinants of what constitutes positive characteristics among teachers. Neither the full role played by mindfulness nor the psychological capital of teachers with positive characteristics remains unknown. This study marks the beginning of an investigation into such an issue. The sample of the study involved the participation of 374 teachers. In Model 1, the mediating role of psychological capital was tested in the relationship between mindfulness in teaching and teacher positivity. Meanwhile, in Model 2, the mediating role of mindfulness in teaching was tested in the relationship between psychological capital and positive teacher characteristics. In Model 1, the standardised path coefficients between the variables were not found to be statistically significant, thus prompting the test of a second structural model. The results showed that mindfulness in teaching appeared to constitute a full mediator in the relationship between psychological capital and positive characteristics among primary school teachers.

Keywords:
Positive characteristics, mindfulness in teaching, psychological capital, teachers.

1. Introduction

Teachers conduct their teaching activities in classes consisting of students with different emotional, social, and academic needs. Both eastern and western literature supports that carrying on teaching activities in a group with different needs and is mostly heterogeneous from this perspective brings various mental and professional difficulties (Baltaş & Baltaş; 1998). From this perspective, finding out the factors that may affect the positive characteristics of teachers buffering against these challenging experiences is assumed as an important step in the field.

In recent years, the increase in studies on the effects of personal and professional characteristics of educators on students' social, emotional, and academic skills facilitated a more detailed examination of teachers' positive characteristics. The imbibing of positive characteristics among those leading the learning process is assumed important for both teachers and students alike. Supportively, studies indicate that teachers' well-being is positively related to their' self-efficacy (Huang, Yin, & Tang, 2019) and job performance (Hwang et al., 2017) as well as with their students' academic adjustment (Zee & Koomen, 2016). In this regard, it is crucial to uncover the positive characteristics of educators.

Recent literature on teachers' positive characteristics, personality (Kim et al., 2019; Kim et al., 2018), and teacher-student interactions (Ahmad, 2017; Pianta et al., 2020) are well studied as positive teacher

[1] Corresponding author's address: Istanbul Medipol University/School of Education, İstanbul, Turkey
e-mail: mgordesli@medipol.edu.tr
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characteristics. Furthermore, various academics use this area of research as the basis of their studies into what characteristics contribute to a positive teacher. This is still a controversial field of study, but several approaches have been developed to this end. One study cites the analytical/synthetic, organisation/openness, lecturer/group interaction, lecturer-student interaction, and dynamism/enthusiasm approaches (Aregbeyen 2010), while another posits that, for adolescents, in particular, simply extraverted teachers are those most ''liked'' (Eryılmaz, 2014). According to Eryılmaz and Bek's (2018) ''positive teacher'' approach (2018), which provides the basis for this research, positive characteristics among teachers include an extroverted personality and the ability to embody their subject, form positive relationships with students, increase student participation, and boost students' flow experience.

The general concept of psychological capital focuses on improving human life. Luthans, Youssef, and Avolio (2007) characterise psychological capital as a blend of self-efficacy, hope, resilience, and optimism. The elements of psychological capital include high self-efficacy, contribution to positive choices, motivational effort, patience, and positive thinking. It is asserted that this psychological factor may lead to a reduction in stress. Hope has a positive effect on emotional health and coping with difficulties (Luthans & Church 2002). Hopeful individuals are less anxious and enjoy interacting with people. is more specifically the psychological capacity to "bounce back" from negative to positive aspects (Luthans 2002). Studies on the professional variables related to the psychological capital of teachers suggest that psychological capital is related to such individual processes as teaching effectiveness, work engagement (Tösten et al., 2019), job performance (Fraide et al., 2016), job involvement, and job satisfaction (Demir, 2018). These findings show that teachers high in psychological capital can be more successful in maintaining their attention to the subject they teach and consider the needs of students. So, psychological capital can be a potential variable directly related to mindfulness in teaching.

Mindfulness originates from Buddhist spiritual meditation practices (Hanh 1976) and related to teachers' positive characteristics, such as teaching self-efficacy (Flook et al., 2013) and classroom management skills (Caldwell et al., 2010). Mindfulness is related to psychological capital and/or its components (Brockway, 2019; Malinowski & Lim, 2015; Schussler et al., 2018). These studies on the relations of mindfulness and psychological capital among teachers have examined mindfulness at the dispositional level. Unlike dispositional mindfulness, interpersonal mindfulness examines social behaviours associated with mindfulness, such as parenting and teaching (Khoury 2018). Frank, Jennings, and Greenberg (2016) have examined interpersonal mindfulness in teaching processes. They describe mindfulness in teaching as the teachers' ability to reflect their dispositional mindfulness skills into the teaching processes. According to this approach, two basic factors are used to observe mindfulness in teaching: a) teacher intrapersonal mindfulness in teaching includes the teacher's flexibility between effective teaching and classroom management processes and observing the needs of students, and b) teacher interpersonal mindfulness in teaching involves calmness, compassion, and a sensitivity to student's needs. These two aspects can be affected by psychological capital because psychological capital is an inner experience. In other words, teachers' ability to direct and maintain their attention and awareness toward themselves and their students during the teaching process may be influenced by psychological capital, as in other positive educational characteristics.

In this study, the positive characteristics of primary school teachers is another variable assumed to be related to mindfulness in teaching. Eryilmaz and Bek (2018) define the characteristics of positive teachers as "having an extroverted personality" "the ability to concretise the subject taught", " establish a positive relationship with the students", "increase students' engagement in the class", and "boost students' flow experience". These explanations suggest that mindfulness in teaching can be closely related to these positive characteristics of a teacher. If teachers have flexibility in their teaching activities and students' needs, they can reflect their dispositional mindfulness skills into the teaching practices. Teachers with higher levels of mindfulness in teaching can have a better performance on positive characteristics described by Eryılmaz and Bek's (2018) positive teacher model.

Given these explanations, we have proposed a model that tests mindfulness's mediating role in teaching in the relationship between primary school teachers' psychological capital and positive characteristics. Within this scope, the following hypotheses were examined: a) psychological capital is directly related to mindfulness in teaching; b) mindfulness in teaching is directly related to positive characteristics of teachers; c) psychological capital will have indirect relations to positive teacher characteristics through the mediating role of mindfulness

in teaching. Moreover, mindfulness in terms of teaching is a new concept. While the studies already mentioned here show that psychological capital is influenced by dispositional mindfulness, we have also tested the psychological capital as mediator in the relationship between mindfulness in teaching and the positive characteristics of primary school teachers. We assume that the current study results will inform future studies and practitioners interested in studying and supporting teachers' positive characteristics and well-being.

2. Methodology

2.1. Research Model

In this study, mindfulness in teaching was a mediator variable in the relationship between psychological capital and positive teacher characteristics among primary school teachers. An alternative model, which has taken psychological capital as a mediator variable in the relationship between mindfulness in teaching and positive teacher characteristics, was created. For testing the proposed and the alternative model, structural equation modelling was run. Structural equation models are used to examine the relationships between variables based on a theoretical basis (Sümer, 2000). For testing the models of this study, a path analysis was performed with the latent variables.

2.2. Research Group

The study sample was chosen through a convenience sampling method from primary school teachers working in Istanbul. The data was obtained via online forms. The sample group consisted of 374 teachers, including 202 females (54%) and 172 males (45%). The age of the teachers in the sample group ranged from 22 to 56, with a mean of 43.7 (SD=7.52).

2.3. Data Collection Tools

Psychological Capital Scale (PCS). The scale developed by Luthans et al. (2006) consists of a 6-point Likert type and 24 items. In the Turkish form, the Cronbach Alpha reliability coefficient of the scale came to .89. Considering the results of the CFA regarding the 4-factor structure of the scale, it was observed that the scale fits well with the Turkish sample (cmin = 497.12, df = 163, RMSEA = 0.62, GFI = .92, AGFI = .90, CFI = .93). The sum of these findings showed that the Turkish Form of the Psychological Capital Scale was valid and reliable (Erkuş & Afacan-Fındıklı, 2013). In the current study, the Cronbach-alpha of PCS was found 0.92.

Mindfulness in Teaching Scale (MTS). This scale was developed by Frank, Jennings, and Greenberg (2016) to measure teachers' mindfulness during their teaching processes. In the Turkish version of the scale, the model fit index values generated by a CFA (c2/sd = 2.111, IFI = .93, CFI = .93, GFI = .95 and RMSEA = .054) were satisfactory. The Cronbach-alpha internal consistency coefficient was found to be .78, and the scale showed a significant relationship with the Mindful Attention Awareness Scale (Aslan Gördesli et al., 2018). In the current study, the Cronbach-alpha of MTS was found 0.61.

Positive Teacher Scale (PTS). The development study of this scale was carried out by Eryilmaz and Bek (2018). The research findings yielded a 21-item, five-dimensional scale, resulting in 63.230% of the total variance. The reliability value of the entire scale was found to be .89, which is a satisfactory value for internal consistency. The structure of the scale revealed by exploratory factor analysis was confirmed through a confirmatory factor analysis (RMSEA = 0.067, NFI = 0.92; NNFI = 0.95; CFI = 0.96; IFI = 0.96; RFI = 0.91; GFI = 0.87 and AGFI = 0.83). It was also found that there were positive and moderately significant relationships between teachers' experiencing positive emotions and displaying a positive feature. In the current study, the Cronbach-alpha of PTS was found 0.89.

2.4. Analysis of Data

The participants were recruited from the school staff voluntarily, acknowledging their informed consent. Normality and homogeneity, which were the main assumptions of the path analysis, were checked by the SPSS 22.0 program, and 25 cases that did not meet these criteria were excluded from the further analysis. The remaining analyses were thus conducted with the data obtained from 374 participants. Harmon's single factor test was run to check the common method bias (Podsakoff et al., 2003). According to the results of this test, the scales had a single factor and explained %23.56 of the total variance. This result shows that there is not a common factor bias in this study. For checking the multicollinearity problem in the data set, tolerance and VIF values were calculated. Results showed that tolerance values were greater than 0.2, and VIF were less than 5.0.

These results indicated that there is not any multicollinearity problem (Hair et al., 1998). Lastly, we applied the model testing procedures with the AMOS 22.0 program.

2.5. Ethical

The research process started with our request to Istanbul Medipol University's social sciences ethics committee. The committee has approved the ethical request. During the data collection process, all participants were informed about the aim and scope of the study and the importance of their voluntary attendance. Participants approved that they voluntarily participated in the study.

3. Findings

Table 1 below shows the descriptive statistics consisting of mean, standard deviation, skewness, and kurtosis coefficients regarding the examined variables and correlation coefficients showing the relationships between the study variables.

Table 1. *Correlation Coefficients and Descriptive Statistics of Variables*

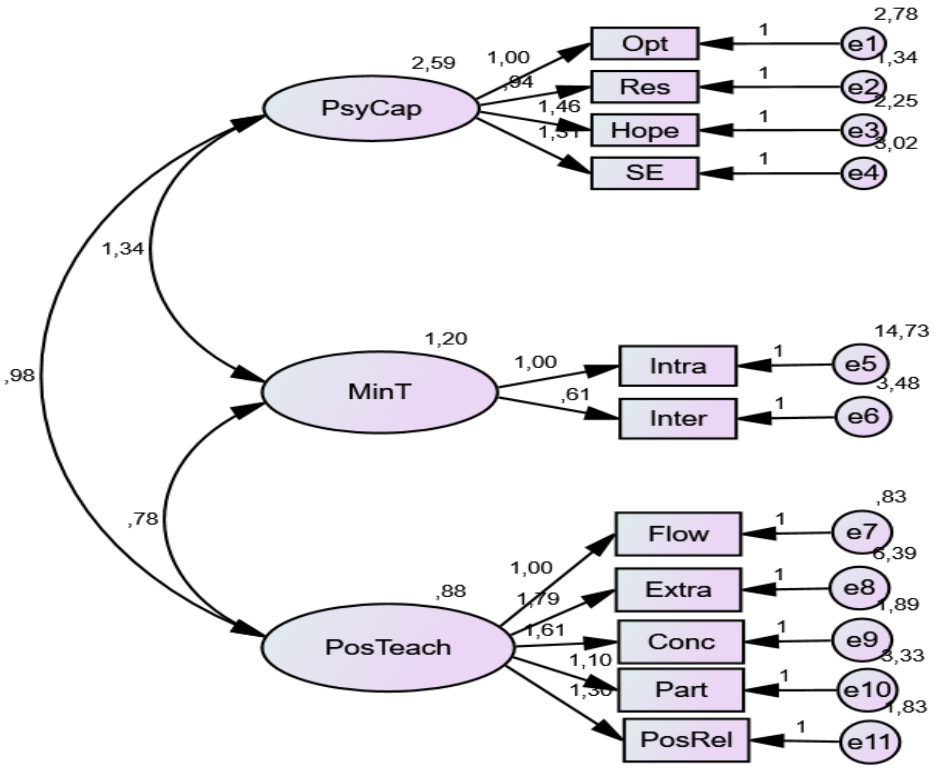
Variable	Descriptive Statistics						
	1	2	3	Mean	Standard deviation	Skewness	Kurtosis
1. Mindfulness in teaching	1			56.912	4.625	-.499	-.127
2. Positive characteristics in teachers	.241**	1		92.878	7.436	-.040	-.972
3. Psychological capital	.281**	.535**	1	86.527	8.155	-.031	-.627

Note. ** p < .001, N = 374.

As shown in Table 1, the skewness ranged from -0.3 to -.753, while the kurtosis ranged from -.972 to .281. The ± 2 range recommended by Stevens (2002) for normal distribution was met, so the data of the variables showed a normal distribution. Table 1 also yields significantly positive relationships between mindfulness in teaching and positive characteristics in teachers (r= .241, p<.05), mindfulness in teaching and psychological capital (r= .28, p<.05), and between positive characteristics in teachers and psychological capital (r= .54, p<.05).

According to the results of an independent sample t-test conducted to determine whether positive teacher characteristics differed according to gender, it was found that positive teacher characteristics did not show a difference in terms of gender (t = .91, df = 369, p > .05). Meanwhile, a significant relationship was found between positive characteristics in teachers and tenure (r=.012, p<.05). Since the teacher positivity scores of the sample were found to be significantly related to tenure, we took this as a control variable in the structural models tested.

Before testing the proposed model, the measurement model was examined (Figure 1 below). Goodness of fit values for the measurement model were found as CMIN / df = 3.309, GFI = .94, IFI = .93, TLI = .91, CFI = .93, SRMR = .04 and RMSEA = .079. Standardised regression weights of the measurement model were between .27-.79 (p<.05). The measurement model covariances between the variables were found statistically significant (p<.05). The proposed and alternative models were tested after the verification of the measurement model.



**Opt=Optimism, Res=Resilience, SE=Self-efficacy, Intra=Intrapersonal mindfulness in teaching, Inter=Interpersonal mindfulness in teaching, Extra=Extraverted personality, Conc=Concretiing the subject that taught, Part=Increasing students' participation in the class, PosRel=Establish positive relationship with students).*

Figure 1. *The Measurement Model*

The proposed model, in which tenure was used as a control variable, tested the partial mediation of mindfulness in teaching in the relationship between psychological capital and positive characteristics in teachers. This model was revised because the standardised path coefficient value between psychological capital and positive characteristics in teachers was not statistically significant. The revised model tested the full mediation of mindfulness in teaching (Figure 2 below). In this model, goodness of fit values was found to be CMIN/df = 2.757, GFI= .94, IFI= .93, TLI= .91, CFI= .93, SRMR= .043 and RMSEA= .069.

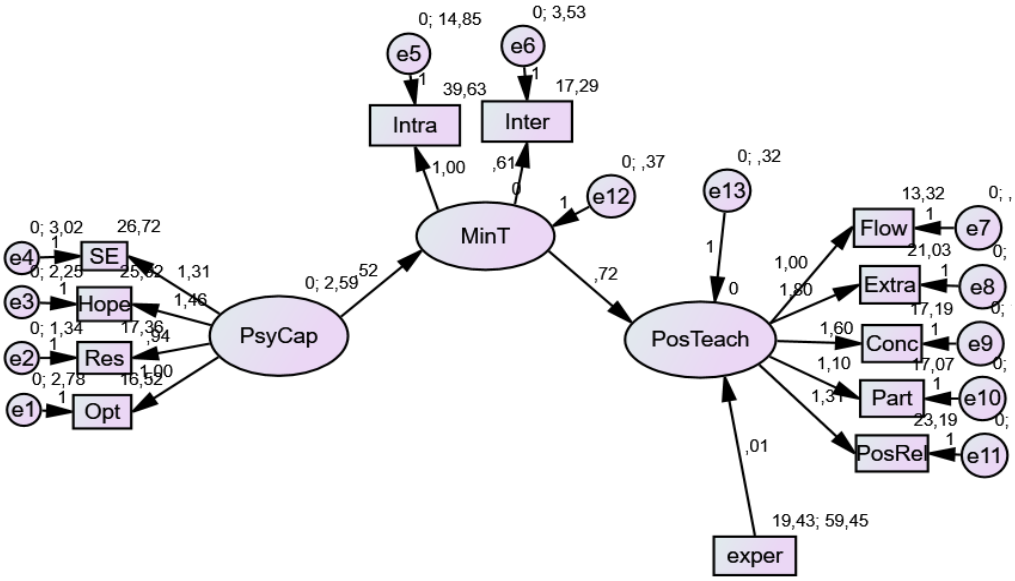


Figure 2. *Revised Proposed Model*

After testing the proposed model, an alternative model was developed in which psychological capital was considered a mediator in the relationship between mindfulness in teaching and positive characteristics in

teachers. According to this model, the standardised path coefficients between variables were not found statistically significant.

A bootstrapping analysis was used for the proposed model. The bootstrapping process was carried out to fully mediate mindfulness in teaching in the relationship between teachers' psychological capital and positive characteristics. The direct and indirect path coefficients and confidence intervals in this model are presented in Table 2 below.

Table 2. *Bootstrapping Results for the Proposed Model*

Path	Bootstrapping		Bias %95 CL	
Direct	Estimate	SE	Lower Limit	Upper Limit
PsyCap → MinT	.52	.13	.27	.79
MinT → PTS	.72	.25	.47	1.35
Indirect				
PsyCap → MinT → PTS	.38	.04	.30	.63

According to the findings presented in Table 2, the direct effects between the variables were significant. The effect of psychological capital on mindfulness in teaching (β=.52) and mindfulness in teaching on positive characteristics of the teacher (β =.72) were also found to be significant. Furthermore, how psychological capital indirectly affects positive characteristics in teachers was significant (β =.38, bootstrap coefficient = .04, 95% C.I. = .30-.63). These findings show that mindfulness in teaching has a fully mediating role in the relationship between teachers' psychological capital and their positive characteristics.

4. Conclusion and Discussion

This study tested two different models to understand the roles of mindfulness in teaching and psychological capital on the positive characteristics of primary school teachers. Before testing the models, we examined whether positive teacher scores differ according to gender and tenure to determine any possible control variable in the model. The analyses indicated that positive characteristics in primary school teachers did not differ according to gender but related positively to tenure. Although there was no study reporting a relationship between tenure and positive characteristics in teachers, it was discovered that tenure is related to student participation (Garet et al., 2001), teachers' professional performance, and stress (Hanif et al., 2011).

The proposed model tested the mediating role of mindfulness in teaching in the relationship between psychological capital and positive characteristics in primary school. The first finding of this model was that psychological capital significantly predicted mindfulness in teaching. Psychological capital includes a high self-efficacy, contribution to positive choices, motivational effort, patience, and positive thinking. It is thus asserted that this feature facilitates effective coping with stress (Luthans & Church, 2002). According to Luthans (2002), an individual's self-efficacy is closely related to (1) performance gains or mastery; (2) learning for someone else; (3) feedback on progress; and (4) psychological or physiological arousal. The effect of self-efficacy on mindfulness in teaching can be addressed at the intrapersonal and interpersonal levels. Namely, since high self-efficacy includes psychological and physiological stimulation, it ensures that teachers are more careful and focused on the present moment (intrapersonal speaking) during teaching activities. Teachers naturally receive feedback from students about performance gains, mastery of work, progress, and learning from others. Each of these factors brings acceptance, receptivity, and open communication into the teacher-student relationship. A teacher with high self-efficacy would possibly develop a more open and receptive approach to the feedback from students, who are the target audience of the teaching activity.

In terms of psychological capital, hope refers to the ability to conceive approaches to achieve desired goals and gain intrinsic motivation by considering these approaches (Snyder, 2002). Research also shows that high levels of hope and optimism are positively associated with maintaining attention to positive stimuli and negatively associated with maintaining attention to negative stimuli (Kelberer et al., 2018). Teachers with high levels of hope and optimism are prone to experience less stress and focus on positive components rather than negativities in the classroom, which may increase mindfulness in teaching.

With evidence that resilient individuals tend to be more effective in life, the same effect can also be expected reasonably at work. Resilience includes the need for improvisation and adaptation in uncertain times (Youssef & Luthans 2007). Teachers confront many stimuli in the context of the classroom and face challenging tasks such as directing students' attention to the teaching process and the classroom environment. Due to students' distractions or differing emotional states, teachers may have difficulty directing students' attention to the teaching material. At this point, flexibility plays an important role in recovering the teachers' attention when distracted and in continuing to the tasks they are working with.

We also found that mindfulness in teaching significantly predicted positive characteristics among primary school teachers. Bulger et al. (2002, p. 3) state that "teachers can start actively establishing a positive learning environment by demonstrating their passion for the subject, using student names, reinforcing student participation during the lesson, and moving between students." Similarly, Eryilmaz and Bek (2018) define the characteristics of positive teachers as having an extroverted personality and the ability to concretise the subject taught, establish positive relationships with the student, increase students' engagement in the class, and boost students' flow experience. Frank et al. (2016) address mindfulness in teaching at intrapersonal (mindfulness, awareness, focus on present) and interpersonal (an open, accepting, and receptive trend in teacher-student interaction) levels. An examination of the definitions and studies on mindfulness pointed to the relationship of this construct with extraversion (Baer et al., 2004; Brown & Ryan 2003; Van den Hurk 2010). Understandably, mindfulness in teaching creates positive effects on the teacher-student relationship since it involves awareness, open and accepting communication. The literature confirms that mindfulness can be associated with teacher-student interaction (Jennings 2015) and teachers' emotional supportiveness (Molroy-Elreda et al., 2018). Mindfulness in teaching involves open, understandable, and acceptance-based communication, attention and awareness in the teacher-student relationship. When we look at concretisation, a sub-component of teacher positivity, we can define it as organising targeted information at the level and content the other party can receive. Thus, explaining a subject by concretising it involves carefully monitoring variables such as the target students' structure, expectations, and learning characteristics. This requires teachers' awareness and acceptance – that is, mindfulness – in teaching. Alternatively, one can say that mindfulness in education affects the explanation of a given subject by concretising it. According to Skinner and Belmont (1993), a teacher's use of concrete statements about a subject increases the behavioural participation of the students.

Another dimension of teacher positivity is the flow of the lesson. Seligman and Csikszentmihalyi (2000) define the characteristics of the flow as the degree of a person's attention to the activity they are involved in, the coordinated progress of the action and awareness, loss of reflective self-consciousness, the belief that the person can control their actions, the distortion of temporal experiences, and the internal reward of performed activity/action – although the flow is an individual experience. Therefore, flow calls to the importance of future goals, self-confidence, and the desire for pleasure and effectiveness (Seligman & Csikszentmihalyi 2000). Several studies reveal that mindfulness and flow experience are interrelated (Bervoets 2013; Diaz 2011; Moore 2012).

We examined the mediating role of mindfulness in teaching in the relationship between psychological capital and positive characteristics in primary school teachers, finding that mindfulness in teaching is a full mediator between these variables. In other words, teachers with high psychological capital also have a high mindfulness level in teaching, which contributes to the degree of their positive characteristics. According to the proposed model, psychological capital does not have a significant predictive role on positive characteristics in primary school teachers. Although the psychological capital of teachers has a positive effect on professional performance, professional satisfaction, professional passion, and creative teaching (Cheung et al., 2011; Fu 2015; Viseu et al., 2016), it seems that it does not show the same effect for positive characteristics in this study.

Research on dispositional mindfulness and psychological capital has shown that dispositional mindfulness predicts psychological capital (Bajaj & Pande 2016; Kotze 2018; Malinowski & Lim 2015; Roche et al., 2014). However, the alternative model of this study showed that the path coefficients of mindfulness in teaching psychological capital is not significant. This result supports the findings of other studies in that dispositional mindfulness and interpersonal mindfulness are related, but they are different concepts than each other (Aslan-Gördesli et al., 2019; Frank et al., 2016; McCaffrey et al., 2017).

5. Recommendations

This study showed that psychological capital has an indirect effect on positive teacher characteristics through mindfulness in teaching among Turkish primary school teachers. Although several studies pointed out strong direct relationships between psychological capital and job-related outcomes in Turkey (Demir, 2018; Kurt & Demirbolat, 2019) and worldwide (Adil & Kamal, 2019; Cheung et al., 2012; Viseu et al., 2018); this study further showed that mindfulness in teaching would have a key role in this strong relationship. With this in mind, we recommend that mindfulness in teaching can be a part of teacher education programs of the candidate teachers, and this skill can also be cultivated in teachers working in the field.

Given the more specific implications of this study, researchers should consider examining the relationships between positive characteristics in teachers, related variables, and psychological capital through different measurement tools to develop a better understanding of positive characteristics in teachers and their relationship with psychological capital. This study was carried out in a sample consisting of primary school teachers who work in Turkey. Therefore, it is considered important to renew the study in different levels of education, institutions, and cultures. Teachers, without doubt, have a significant impact on children's lives, especially in the first years of schooling. Therefore, teacher positivity should be studied further, and the characteristics of this concept should be better defined. Although this study explored the effect of mindfulness on teacher positivity processes in education, studies on the impact of students' emotional and behavioural processes will be important for the future. It is hoped that research on the effectiveness of education programs to develop mindfulness in teaching will contribute to the literature on interpersonal mindfulness.

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Appendix: Positive Teacher Scale Items (Translated from Turkish form)

1. I give lessons to a level that my students can understand
2. I prevent my students from being cut off in class by making the lesson interesting
3. I keep my students' curiosity about the lesson alive
4. I am a social person
5. I am a friendly person
6. I am a cheerful person
7. I am a talkative person
8. I am a person who radiates enthusiasm around him/her
9. I explain the subject with examples from daily life
10. I share different stories/anecdotes during the lesson
11. I give lessons by giving examples from my own life
12. I give interesting examples
13. I get my students to participate in class
14. When my students do not listen to the lesson, I warn them once in a while
15. In the lesson, I use sentences like "Listen here very carefully"
16. I solve questions at the board
17. I inquire after my students' health
18. I take care of my students' problems
19. I know my students' names
20. I guide my students
21. I support my students for their future lives

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What Happened to Children with Avoidant Attachment? A Study of Social Relations-Based Behaviours of Avoidant Children from the Age of 6 to 19

Feyza UCAR CABUK[1], Serdal SEVEN[2], Zeynep Deniz SEVEN[3]

[1]*Mersin National Education Directorate, Ministry of Education, Mersin, Turkey* *0000-0001-7341-0420*

[2]*Department of Preschool Education, Fatih Sultan Mehmet Foundation University, İstanbul, Turkey* *0000-0003-3965-4725*

[3]*Faculty of Health Science, İstanbul Esenyurt University, İstanbul, Turkey* *30000-0003-3900-989X*

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ABSTRACT

The purpose of this study is to assess the social relationship-based behaviors of 19-year-old children who are in the early stages of adulthood and had an avoidant attachment style at age 6. Based on criterion sampling, a purposive sampling method used in qualitative research, the study group of this research was selected from children whose attachment security had been previously identified. The study was conducted with 5 girls and 5 boys with avoidant attachment styles selected from the 26 available children who participated in the 2006 study that identified the attachment patterns of 110 children. The data collection instruments of the study are the IDFSS attachment scale used in 2006 and a semi-structured interview form and a student data form used in 2019. The study concludes that children who exhibited avoidant attachment at age 6 maintained their attachment patterns. They were found to fail in perceiving academic achievement, coping with emotional problems, relationships with parents and others, and trust in others.

Keywords:
Avoidant attachment, social relations, early childhood, early adulthood

1. Introduction

Attachment is the emotional tie built between the caregiver and infant and shaped in the early stages of life, showing a lifelong impact on people's emotions, thoughts, and attitudes (Bowlby, 1969; 1982). The word "caregivers" in the definition often refers to mothers (Bowbly, 1973). The most prevalent theory describing attachment is Bowlby's attachment theory. Attachment theory analyses the causes of the emotional tie built between caregivers and infants, describes the development of attachment, studies the features of caregivers and infants in detail and further seeks an answer to what extent people's personalities and relations with other people are influenced by the type of attachment in early stages of life (Bowlby, 1980; 1988).

Ainsworth is another researcher who has studied Attachment Theory in detail. Ainsworth describes attachment as a bond that will affect future relationships (Ainsworth, 1969). Ainsworth made attachment into something measurable by developing Bowlby's theoretical study with his practical work. This study by Ainsworth is called the "Stranger Situation". In their study, Ainsworth et al. classified attachment into three types: secure attachment, ambivalent-uncertain attachment, and avoidant-insecure attachment (Ainsworth, Blehar, Waters, & Wall, 1978). Later, Main and Solomon (1990) added the disorganized-insecure attachment type to the attachment literature.

[1] Corresponding author's address: Mersin National Education Directorate, Ministry of Education, Mersin, Turkey
e-mail: feyza_ucar@hotmail.com
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1.1. Attachment Styles

Attachment is basically divided into two categories: secure and insecure attachment. Insecure attachment is classified as anxious-ambivalent and anxious-avoidant (Ainsworth et al., 1978). Disorganized attachment is listed under insecure attachment (Main & Solomon, 1990).

Secure attachment is the attachment style expected to occur when caregivers respond consistently to infants' needs with love and warmth. Securely attached infants/children develop a sense of confidence in themselves and the environment as they know that their caregivers will be available and value them when they need. Anxious-Ambivalent attachment is the attachment style expected to develop when caregivers respond inconsistently to infants' needs, such as warm, distressed, and neutral reactions in different cases or sometimes satisfy and sometimes fail to satisfy the infants. Children/infants who have this attachment pattern cannot be sure that their caregivers will be available and comfort them because of their inconsistent behaviors. Therefore, they are insecure with their environment and their self-conception is often negative. Anxious-Avoidant attachment is expected to occur when caregivers are repeatedly cold, indifferent, and insensitive to infants' needs. Infants/children in this attachment type are sure that their caregivers will neither be available nor comfort them when they need. They believe that self-sufficiency is the best strategy. They are indifferent to their environment. Their self-conception is often negative (Ainsworth et al., 1978; Hazan & Shaver, 1994; Simpson & Rholes, 1998; Barnet & Vondra, 1999). Disorganized attachment is often observed in children who are abused or neglected by their caregivers. It might occur when caregivers suffer mental problems or drug addiction. Infants/children in this attachment category are cold, depressive to their caregivers and lack confidence and motivation (Main & Solomon, 1986; 1990).

1.2. Effects of Attachment in Following Ages

According to Bowlby (1980), the first attachment situation with other individuals begins in infancy and might last up to school age, adolescence, and adulthood. Only the attachment relationship with the caregiver might add cheer and persistence to one's life. On the other hand, Ainsworth suggests that the attachment style between infant and caregiver will be repeated in close relations in adulthood (Ainsworth, 1989).

Various researchers have tested ainsworth and Bowlby's different views on the life-long effects of attachment. Many subsequent studies have supported this view and concluded that attachment status overlaps with the following life periods (Fraley, 2002; Moss, Cyr, Bureau, Tarabulsy, & Dubois-Comtois, 2005; Seven & Ogelman, 2012; Waters, Hamilton, & Weinfield, 2000; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). For example, Waters et al (2000) assessed the attachment styles of a group of participants in infancy and 20 years later. Study results indicated that attachment styles were consistent.

Attachment styles formed in early childhood are not only enduring, but continue to affect social, emotional, and behavioral characteristics of the individual (Lewis, 1990; Pearson et al., 1993). In particular, it influences self-concept and perceptions of the environment through internal working models. Internal working models, clarified by attachment style and shaped by caregiver behavior, are the individual's perceptions of self and others. Positive perceptions of self and others develop in secure attachment, whereas negative perceptions develop in insecure attachment (Bretherton & Munholland, 1999). Clark (1996) indicates that adolescents with secure attachments have fewer social problems and have more confidence in themselves and others. Shaver & Mikulincer (2002) reported that attachment styles have an impact on the quality of interpersonal relationships in adulthood.

1.3. Current Study

This study aims to evaluate the social relations-based behaviors of 19-year-old children who are accepted to be in the initial adulthood period and had avoidant attachment style 13 years ago at the age of 6. In the attachment classification of Ainsworth et al. (1978), avoidant attachment is the attachment style where mother-infant interaction is the poorest and perception of self and others is negative. In the avoidant attachment style, infants believe that self-sufficiency is the best strategy, avoid asking caregivers for help in times of distress and keep indifferent to the existence and absence of their caregivers (Hazan & Shaver, 1994; Bretherton, 2003). Studies have revealed that individuals with avoidant attachment avoid close relations, are disturbed by social attention, and have difficulty trusting others (Cooper, Shaver, & Collins, 1998; Shaver & Brennan, 1992).

Avoidant attachment is the most prevalent attachment style in Turkey according to studies conducted with 6-year-old children (Seven, 2010; Seven & İlhan-Ildız, 2020). Longitudinal studies in Turkey and worldwide on children with avoidant attachment, a type of insecure attachment, in relation to their coping styles in social problems and emotional matters from early childhood to early adulthood are quite limited. Therefore, it is important that this study addresses the social relationships and emotional coping strategies of individuals in early adulthood diagnosed with avoidant attachment at age 6. It is anticipated that the study of individuals with avoidant attachment styles longitudinally will contribute to the attachment literature. The purpose of this study is to examine the social relationship-based behaviors of 19-year-old children who had an avoidant attachment style at age 6.

2. Methodology

2.1. Research Model

Qualitative researches might be defined as a research type where qualitative data collection tools such as observation, interview and document analysis are used and a qualitative process is followed to reveal perceptions and cases in a natural setting with a realistic and holistic approach (Yıldırım & Şimşek, 2000). An embedded multiple case study, one of the case studies types, was used in this study (Yin, 2003). This case study model was selected in order to reveal the social status of individuals who had an insecure avoidant attachment in 2006 at the age of 6.

2.2. Study Group

Based on criterion sampling, a purposeful sampling method used in qualitative research, this research's study group was selected among children whose attachment security was previously identified. The study was carried out with 5 girls and 5 boys with avoidant attachment selected among 26 children available who participated in the study in 2006 where attachment patterns of 110 children were identified.

The criteria used for identifying the research sample are given below.

- 1st Criteria: Taking the IDFSS in 2006
- 2nd Criteria: Having an avoidant attachment
- 3rd Criteria: No parent death or divorce

10 of 12 individuals having these criteria were involved in the study.

In order to identify social relationship patterns based on the process of mother-child bonding between the ages of 6 and 19, the author conducted a study of children who participated in the IDFSS in 2006. As a result of the study in the immediate area, likely participants were identified based on available participants. Participants were contacted and informed of the time and place of the interview. They were interviewed on the agreed day and time. The demographic properties of children and families involved in the study are presented in Table 1.

Table 1. *Demographic Properties of the Children and Families*

	n	%
Gender		
Boy	5	50.0
Girl	5	50.0
Mothers' Educational Status		
Primary school	3	30.0
Secondary school	6	60.0
High School	1	10.0
Family Structure		
Nuclear family	6	60.0
Extended family	4	40.0
Economic Status		
Low	4	40.0
Middle	5	50.0
High	1	10.0

According to the demographic properties of the children and families presented in Table 1, girls comprised 50.0% (n=5) and boys comprised 50.0% (n=5) of the study group.The educational status data of the mothers show that 30.0% of the mothers (n=3) were graduates of primary school and 60.0% (n=6) secondary school, while 10.0% of the mothers (n=1) were graduates of high school. In terms of family sturucture, 60.0% of the families (n=6) were nuclear and 40.0% of the families (n=4) were extended family. In terms of the mother's economic status, 40.0% (n=4) had low economic status, 50.0% (n=5) middle economic status and 10.0% (n=1) of the mothers had high economic status.

2.3. Data Collection Tools

The research data collection tools are the IDFSS attachment scale used in 2006 and semi-structured interview form and student data form used in 2019.

2.3.1. IDFSS

It was developed by Cassidy (1988) to reveal mental representations of 6-year-old children on attachment status by means of stories. There are six stories on the scale, and it takes nearly three minutes for the child to complete each story. Stories are scored on a 5-point scale. Stories that reflect the secure relationship with the attachment figure are scored 4 and 5 while stories reflecting hostile, negative relationship are scored 1 and 2 and stories reflecting avoidant relationship are scored 3. Maximum scores in IDFSS is 30 while the minimum score is 6. 30 define maximum attachment security and 6 defines maximum insecurity. IDFSS was adapted to Turkish by Seven (2006), who found its alpha coefficient 0.83 and split-half reliability 0.83 for scale scores.

2.3.2. Interview Form

Semi-structured interview form involves questions to identify self-perception styles of youngsters in social situations.

2.3.3. Student Data Form

The authors developed student data form to learn demographic distributions of the children and families.

2.4. Data Analysis

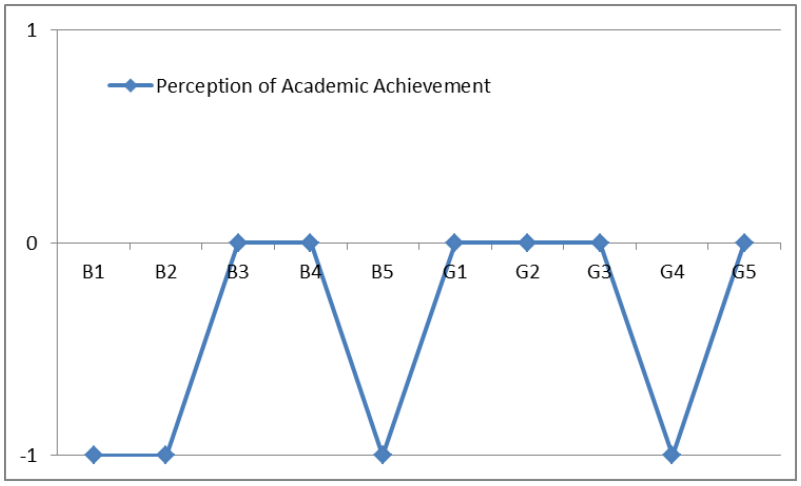
Children were classified into attachment types with IDFSS in 2006. Descriptive-interpretive data analysis was carried out in 2019. Data are reduced, put in a certain order, selected, and interpreted in this type of analysis. Interpretations are given a place on descriptions (Ekiz, 2007). In this study, data are analyzed; categories are established, graded, and revealed on graphs.

2.5. Data Collection Procedure

In the baseline of the study, 2006, a private room carrying suitable criteria for IDFSS was used for implementing IDFSS. Data were collected in the second point, 2019 spring. Ethics board permission was granted before data collection for doing and voice-recording the interviews. Research for people to interview was carried out and probable participants were contacted by means of available participants. Each participant was informed about the research before the interviews.

3. Findings

3.1. Perception of Academic Achievement



* -1 negative achievement perception/ 0 Neutral/ 1 Positive Achievement perception

Figure 1. *Academic Achievement Perception of the Avoidant (B: Boys and G: Girls).*

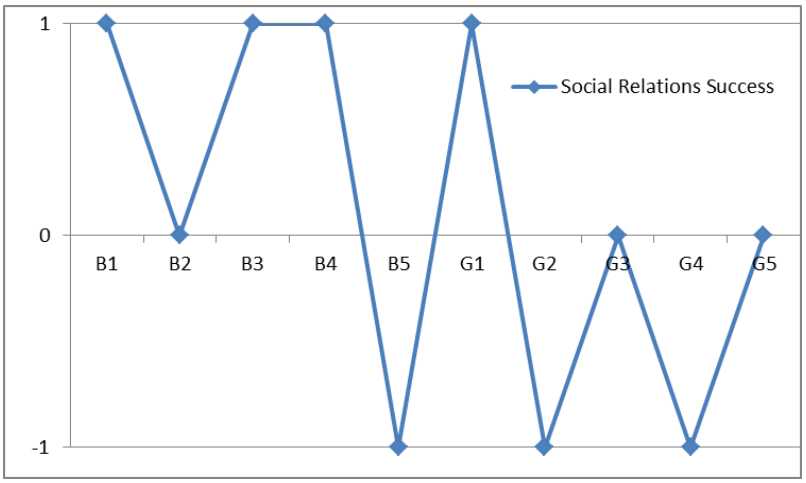
None of the avoidant girls and boys finds themselves successful in academic terms. They see them under their potentials. It is observed that they lack confidence in academic achievement.

Example statements

B2 I don't find myself academically capable due to the incapability of others.

B1 Am I successful? I am not sure.I can't see strength in myself.

3.2. Social Relations Success



* -1 Unsuccessful / 0 Neutral- uncertain/ 1 Successful

Figure 2. *Social Relations Success (B: Boys and G: Girls).*

Even when they reported being successful in social relationships, they gave detailed examples of poor relationships and even confessed that they had failed. Transitions were observed from parents to friends and from friends to parents. This indicates that the status of their social relationships is shaped in the context of their relationships with the social environment. Boys were more likely to avoid relating to their relationships with their parents. Escape from mother to brother or father was observed. Intimacy problems in relationships were also mentioned.

Example statements

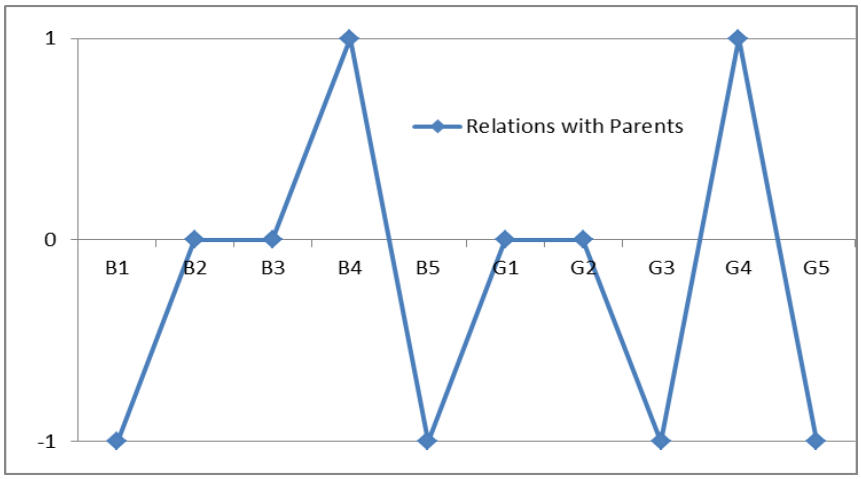
G3 I find myself successful, but we might have conflicts. I don't know my position in social circle. I have problems with mum when I am with friends and I have problems with friends when I get closer to mum.

B4 I have excellent relations with people. Most of them love me. I am good at it.

G2 I don't trust others. My friends let me down. I am unsuccessful.

B5 I don't use social media. I stay far away from everyone in case they make fun of me.

3.3. Relations with Parents



* -1 Unsuccessful, avoiding talking about the relation/ 0 not sure, conditional/ 1 Successful/ feel close

Figure 3. *Relations with Parents (B: Boys and G: Girls).*

One boy and one girl perceive their relationships with parents as positive, while other participants either avoid talking about their relationships or describe them as unsuccessful. Example statements:

B4: Thanks God! it is fine with my parents. They love me and I love them (This boy reports that they did not have god relations previously, but he overcame this problem by displaying unconditional respect to parents after he received religious education)

B1. I cannot approach mum. My relations are poor. I am trying not to be a burden on my family.

3.4. Coping with Emotional Matters

All participants find themselves incapable of coping with emotional matters. Another thing they have in common is that they try to solve their emotional problems on their own.

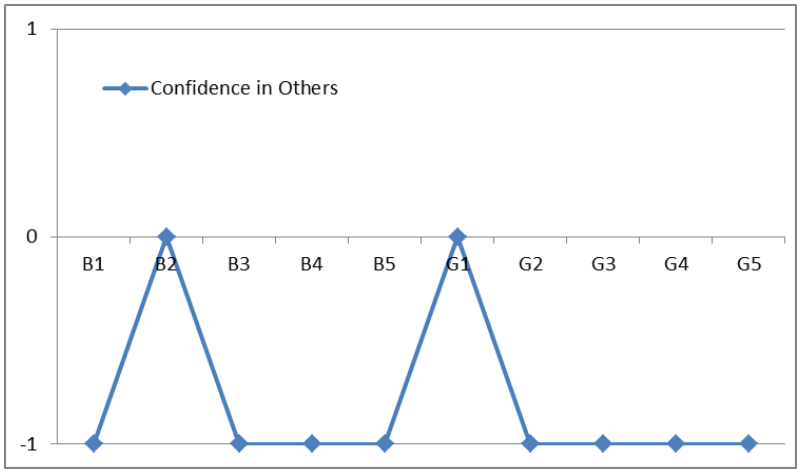
Example statements

G1 I am unsuccessful. I weep and fail to defend myself. I do not turn to others. I wait until it is over.

B1 Unsuccessful. I cannot manage on my own. I need support but I cannot open to my family.

B3 When I am upset, I go somewhere where I can be alone.

3.5. Confidence in Others



* -1 no confidence/ 0 conditional/ 1 trusts

Figure 4. *Confidence in others (B: Boys and G: Girls).*

Two of the participants trust only conditionally, while others are completely suspicious. They are likely to come closer to the family if they feel distrust of others. Example statement

G1 They have to be like me if I am to trust others (trust depends on them being like me)

4. Discussion and Conclusion

The purpose of this study is to assess the social relationship-based behaviors of 19-year-old children who are in the first stage of adulthood and had an avoidant attachment style at age 6 13 years ago.

None of the boys and girls with avoidant attachment styles who participated in the study succeeded academically. Okpycha and Courtneyb (2018) conclude in their longitudinal study that adolescents with avoidant attachment style do not attend their schools regularly, have poor grades, and perform poorly in school. Kerns (2014) suggests that children who exhibit avoidant attachment characteristics may have difficulty regulating emotions, which could affect anxiety and academic performance. There are numerous studies in the literature that indicate a relationship between anxiety and academic achievement (Vatasari et al., 2010; Dan, Bar & Kurman, 2014; Lewis-Morrarty et al., 2015). Thus, it is believed that secure attachment creates a sense of security in children and has a positive impact on academic performance. On the other hand, it could be said that children who exhibit insecure attachment characteristics suffer from severe anxiety and their academic performance is negatively affected. The participants in the study see themselves as below their means. Even though they claim to manage social relationships well, they detail examples of poor relationships. In a similar study, Uluç and Oekten (2009) conclude that children who have an avoidant attachment style are less popular with their peers than children who have a secure attachment style. According to Cassidy, Kirsh, Scolton, and Parke (1996), attachment style influences children's relationships with peers and provides a foundation for other relationships, while Granet and Maysel (2001) suggest that attachment style acts as a mediating variable in peer relationships. In this case, it is expected that the social relationships of individuals with avoidant attachment will be negatively affected. There are also studies that suggest that children with avoidant attachment style are likely to suffer from behavioral and emotional problems in the future (Yalom, 2014) and are less extroverted than children with secure attachment style (Kochanska & Kim, 2013) and that these factors affect their social relationships. There are also studies that suggest that children with avoidant attachment style are unfavorably affected in establishing social relationships in adulthood and their relationships are short and weak (Granet & Maysel, 2001; Moss, St-Laurent, Dubois-Comtois, & Cry, 2005; Lee,2008; Wiltz,2005).The authors observed that individuals avoid talking about relationships with peers, in addition to fleeing from mother to brother, father. Intimacy problems in relationships were also mentioned. According to Bartholomew and Horowitz (1991), avoidant attachment is an attachment pattern in which the person's perception of self is positive, but the perception of others is negative. People with avoidant attachment style have high self-esteem but negative attitudes toward others and reject the need for close relationships. Therefore, these individuals avoid forming close relationships. Mikulincer, Shaver, and Solomon (2015)

emphasize that attachment styles often remain stable over time, while they may change as a result of powerful experiences that influence people's beliefs about "the value of asking the attachment figure for help and the possibility of accessing safety." Again, another study concludes that children who have an avoidant attachment style have high levels of anxiety in subsequent years and this situation leads to avoidance (Shamir-Essakow, Ungerer, & Rapee, 2005).

All the participants stated that they are not good at handling emotional situations. They feel that they are left alone with their problems. Evirgen-Geniş and Goezuen-Kahraman (2018) investigated the correlation between attachment status and self-concept. They concluded that most of the participating children developed avoidant attachment. Moreover, they suggest that children's attachment status is positively correlated with their self-concept and social self-concept. Children with insecure attachment are far from self-sufficient and feel unhappy. This perception is consistent with the finding that study participants with avoidant attachment feel alone. Stevens (2014) similarly examined whether individuals with different attachment styles exhibit different abilities in defining and regulating emotions. He found that individuals with avoidant attachment had no awareness of defining emotions and showed less response to their emotions. This finding supports Mikulincer, Shaver, and Pereg's (2003) model that people deal with emotions in different ways depending on their attachment style. For example, individuals with avoidant attachment avoid reflecting on their emotions. Rholes, Simpson, Friedman (2006) conclude that couples with avoidant attachment style suffer from emotional problems and severe stress after birth and are dissatisfied with the experience of parenthood.

All participants indicated that they were either conditionally or unconditionally distrustful of others. Paktuna-Keskin (2014) in another study concludes that attachment is necessary for the child to gain trust in others, become aware of himself and the environment, and develop self-confidence. In a similar study, Ozturk (2017) concludes that mother-father attachment style significantly predicts self-confidence. In a longitudinal study, Simpson (1990) analyzed the effects of secure, anxious, and avoidant attachment styles on relationships and concluded that individuals with avoidant attachment have less confidence and satisfaction in their relationships than individuals with secure attachment. According to attachment theory, the attachment style developed in early childhood forms the basis for close friendships, personality, socio-emotional characteristics, and relationship development in subsequent life stages (Chow, 2008; Nathanael & Mark, 2018; Suemer, 2006; Rholes, Simpson & Friedman, 2006; Thompson, Grace & Cohen, 2002; Waters, Hamilton and Weinfield, 2000). This study supports the literature. It concludes that children who had avoidant attachment at age 6 maintained their attachment patterns and therefore failed in this area: Perception of academic achievement, coping with emotional problems, relationships with parents and others, and trust in others.

This study demonstrates the importance of identifying preschool children's attachment status. There are risks if preschool children with avoidant attachment status are not treated. The study also shows that the IDFSS, introduced in 2006, provides accurate results about children's security patterns. It is believed that the conclusions of the study will contribute to theoretical knowledge and become a reference for researchers. In this study, which assesses the social relationship-based behaviors of 19-year-old children with avoidant attachment patterns in childhood, an expansion of the study group and the use of other measurement instruments could be recommended.

Considering that attachment is a two-way process and there is often a correlation between the parents and the child's attachment style, it might be advisable to include the parents and other community members who play a role in the child's life rather than focusing only on the child. An investigation into the causes of avoidant attachment in the Turkish community might also be recommended.

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Analysis of Gender Fairness of Primary School Mathematics Textbooks in Turkey

Özge NURLU[1]

[1]*Faculty of Education, Erzincan Binali Yildirim University, Erzincan, Turkey* *0000-0002-3429-8162*

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ABSTRACT

This study aimed to analyse whether primary school mathematics textbooks in Turkey (grades 1 to 4) are fair concerning gender. The study analysed four mathematics textbooks approved by the Ministry of National Education and published for use in the 2019-2020 school year. These books were examined in terms of the ratio of the appearances of women and men, the activities performed by each gender, the professional and family roles assigned to these individuals, and who (children/adults) and where (outdoors/indoors) people were. In addition, famous people and characters mentioned in the books were investigated regarding their genders. Fistly, content analysis was used to determine the frequencies of the categorises; then a chi-square test was performed to determined whether there are significant differences in these categories regarding genders. The findings reveal some evidence of equality, including a balanced proportion of females/males appearing, and the presentation of girls and boys in all categories. However, gender inequality is still persistent in terms of the adults' activities, occupational and parental roles, locations in which they are presented and people with whom they are shown. The results show that the textbooks contribute to the reproduction of gender stereotypes by presenting images of adults shaped by a sexist view.

Keywords:
Gender equality, gender stereotypes, mathematics textbooks

1. Introduction

Gender equality is becoming an increasingly important issue in education, as in other disciplines. Education is one of the most powerful tools for achieving gender equality, through preparing students, regardless of their gender, to be equally productive and empowered citizens. For that reason, it must be free of gender stereotypes, bias and discrimination (Bursuc, 2013). However, education is characterised by extensive gender inequalities. The most striking problem is access to education. According to a report by UNESCO (2020), there were approximately 59 million children of primary school age worldwide who were not in school in 2018. Of these, three-quarters were girls. Women still account for almost two-thirds of all illiterate adults – 515 million women lack basic reading skills. Of 86 countries monitoring gender parity in education, almost a third have not achieved equal numbers of girls and boys in primary school. Nevertheless, there has also been global progress in gender parity. The gender parity index in primary and secondary education has risen from about 90 girls enrolled for every 100 boys in 1995 to an equal number of girls and boys in 2018.

However, it is difficult to think that education systems are close to achieving gender equality unless multi-layered and multidimensional discrimination is removed from education. Therefore, the gender inequality problem in education cannot be explained just by looking at the increase in girls' schooling (Sayılan, 2012). The relationship between education and gender involves more than quantitative inequality (Tan, 2008).

[1]Corresponding author's address: Erzincan Binali Yildirim University, Faculty of Education, ,Erzincan, Turkey
e-mail: ozgenurlu@hotmail.com
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Suppose one of the factors creating gender inequality in education is the problem of access. In that case, another is how and to what extent those who can benefit from that education (Sayılan, 2012).

The education system in many countries reproduces gender inequality through biased teacher expectations, teaching and learning processes, and curricula and teaching materials, and these have strong impacts on students (Bursuc, 2013; Leach, 2003). Teachers' gendered beliefs that boys are superior to girls, that boys perform better, or that women/girls should not resist male authority, cause girls to fail to reveal their best potential, and restrict their aspirations for further educational studies. Additionally, gender inequality in a teaching–learning environment reproduces a situation in which girls are discouraged from speaking, boys absorb a disproportionate amount of the teachers' energy and physical conditions do not support equal access to education (Aikman & Unterhalter, 2007). Students also learn gendered beliefs through the formal curriculum (Ballantine, Hammack & Stuber, 2017), affecting their development and their future academic and career choices (Lee, 2018). In this regard, teaching materials such as textbooks contribute to reproducing gender stereotypes by presenting dominant patterns of gender relations and gendered behaviours (Blakemore, Berenbaum & Liben, 2009), and students will carry these into their adult life (Leach, 2003). Gendered messages in textbooks have received a great deal of attention in many countries (Blumberg, 2008). Eventhough, across the globe, numerous studies reveal gender inequality in textbooks, the contents of textbooks still continue to reproduce gender stereotypes (Ballantine, Hammack & Stuber, 2017).

In Turkey, equality of opportunity in education, which refers to access to schooling, learning and other experiences within schools, is guaranteed by legal and constitutional legislation: the Principles of Turkish National Education state that 'Education institutions are open for everyone, regardless of their language, race, gender, disability and religion. No privileges can be granted in education to any person, family, group or class' (Basic Law of National Education, 1973). Unfortunately, gender equality is yet to be achieved in the Turkish education system. First, official data proves that there is gender inequality in the schooling rate. Each year, the Turkish Statistical Institute presents the student sex ratio, which indicates the relative size of the female schooling ratio compared to the male gross schooling ratio in a specific educational year and level of education. This student sex ratio, for the 2018-2019 academic year, shows that gender equality was not achieved. Except in lower secondary school where the ratio was 101.9, there is generally differentiation in favour of boys. In addition to quantitative inequality, promoting a masculine culture in the school environment (Sayılan & Özkazanç, 2009), teachers with gendered behaviours and attitudes (Esen, 2015; Nurlu, 2018; Sayılan, 2012), the formal and hidden curriculum (Eren Deniz, 2014; Tan, 2005) and also textbooks (Artemur Çimen & Bayhan, 2018; Esen, 2007; Gümüşoğlu, 2008; Kalaycı & Hayırsever, 2014; Kaya, 2003; Kırbaşoğlu Kılıç & Eyüp, 2011; Kuşçu, 2014; Sayılan, 2012) all contribute to the reproduction of gender inequality in the Turkish education system.

Textbooks have a special place in the Turkish education system, because they are the main source of knowledge (Altun, 2013), and are offered without charge by the government. Besides, they are the most frequently used materials in classrooms (Kılıç & Seven, 2007). Therefore, textbooks also play a critical role in presenting gender stereotypes by internalising a patriarchal ideology (Esen, 2007).

Previous textbook studies conducted in Turkey have demonstrated that textbooks convey very strong messages about what it means to be a woman or a man. The presentations of gender in textbooks are problematic in two ways: There is a lack of balance in the representation of the genders, and stereotyped portrayals of males and females are reproduced. Even though it has been reviewed constantly over the years, the underrepresentation of females in textbooks still continues. Gender bias in the representation of characters exists in favour of males (Can, 2009; Çubukçu & Sivaslıgil, 2007; Kırbaşoğlu Kılıç & Eyüp, 2011; Özkan, 2013). On the other hand, gender stereotypes are reproduced in textbooks by the presentation of activities, locations and occupations that seem to be appropriate for a specific gender. Women are predominantly portrayed cooking (Çelik, Aydoğan Yenmez & Gökçe, 2019; Demirel, 2010; Vatandaş, 2011), cleaning (Esen Severge, 1998; Sarıtaş & Şahin, 2018; Vatandaş, 2011), caring for children (Asan, 2006; Kasa & Şahan, 2016; Sarıtaş & Şahin, 2018; Topal, 2012; Vatandaş, 2011), and doing housework (Kasa & Şahan, 2016; Vatandaş, 2011). However, men are presented as heads of the family and are not seen dealing with domestic activities (Esen Severge, 1998; Vatandaş, 2011). Most textbooks do not display women outside the home, but they show men in public areas and generally in workplaces (Esen & Bağlı, 2002; Helvacıoğlu, 1996; Kırbaşoğlu Kılıç & Eyüp, 2011; Özkan, 2013; Vatandaş, 2011; Yıldız, 2013). Besides, occupations in textbooks are gender biased and also stereotyped.

The underrepresentation of females in work activities indicates the gender biased nature of the textbooks (Çubukçu & Sivaslıgil, 2007; Kırbaşoğlu Kılıç & Eyüp, 2011; Köseler, 2009; Yıldız, 2013). Further, males are portrayed in a variety of occupations (Demir & Yavuz, 2017; Kasa & Şahan, 2016; Kükrer & Kıbrıs, 2017), especially physically demanding (Topal, 2012) and mechanised ones (Yorgancı, 2008), while females are displayed in a limited range of occupations such as those of a teacher or a nurse (Sarıtaş & Şahin, 2018; Yorgancı, 2008).

In Turkey, studies related to gender equality in textbooks have mostly been focused on social subjects (Can, 2009; Çubukçu & Sivaslıgil, 2007; Demir & Yavuz, 2017; Demirel, 2010; Sarıtaş & Şahin, 2018; Yıldız, 2013), especially Turkish (Esen & Bağlı, 2002; Kasa & Şahan, 2016; Kırbaşoğlu Kılıç & Eyüp, 2011; Kükrer & Kıbrıs, 2017; Yaylı & Kitiş Çınar, 2014; Yeşil, 2014), but very little research has been conducted on mathematics textbooks (Çelik, Aydoğan Yenmez & Gökçe, 2019; İncikabı & Ulusoy, 2019; Özdemir & Karaboğa, 2019). The view that mathematical knowledge is culture free and purely rational (Tang, Chen & Zhang, 2010) may be one of the reasons for the low interest in gender equality issues in mathematics textbooks. Nevertheless, the sociology of knowledge asserts that 'knowledge' cannot be regarded just as knowledge, since it is also shaped by social practices (Tang, Chen & Zhang, 2010) such as gender stereotypes. Indeed, all scientific knowledge fields are gendered (Özkazanç, 2010), as well as mathematics. Many people accept that mathematical thought and female natıre are incompatible (Koblitz, 2002, p. 93). The effects of the stereotype that men are better at mathematics on academic skills have been revealed by researchers (Brown & Josephs, 1999; Schmader, 2002; Schmader, Johns & Barquissau, 2004; Spencer, Steele & Quinn, 1999). Research shows that these gender stereotypes are transferred from one generation to another in culture through the media (Kalaycı, 2015), children's books (Taylor, 2003), language (Wigboldus, Semin & Spears, 2000), parents (Eccles & Jacobs, 1986), and teachers (Esen, 2013; Keller, 2001). Also, textbooks for teaching mathematics play a significant role in reinforcing and reproducing this stereotype by displaying traditional gender role allocations (Özdemir & Karaboğa, 2019; Moser & Hannover, 2014; Tang, Chen & Zhang, 2010). For this reason, it was thought to be important to analyse mathematics textbooks to see, how gender is portrayed first, and then consider this and seek solutions for eliminating gender inequality and stereotypes.

The main goal of this study was to investigate the portrayals of gender in the texts of primary school mathematics textbooks in Turkey. The following research questions were addressed in this study to assess whether these books are fair concerning gender:

- What are the frequencies of the appearances of female and male characters in mathematics textbooks?
- How are female and male characters in mathematics textbooks portrayed in carrying out activities, parental roles and occupations?
- What is the composition of groups or pairs of female and male characters in mathematics textbooks?
- What are the locations (indoors/outdoors) of female and male characters in mathematics textbooks?
- What are the frequencies of the appearance of famous people and characters of different genders in mathematics textbooks?

2. Methodology

2.1.Research Model

This study was designed as a basic qualitative research study. Textbooks as documents constituted the main data sources. As is explained in detail in the following sections, basic content analysis was used to analyse these documents by establishing basic descriptive categories and preliminary codes for coding.

> *"Basic content analysis is largely deductive in form. The researcher's area of interest and preliminary codes are typically developed prior to data collection and analysis drawing on existing theoretical and empirical work. This approach also allows data collection and data reduction using computer software algorithms. Data analysis in basic content analysis is generally quantitative and centers on the use of descriptive statistics" (Drisco & Maschi, 2016, pp. 21-22).*

2.2. Research Sample

The sample for the study was compiled as follows. The textbooks selected for the purpose of the study were approved by the Ministry of National Education and published for use in the 2019-2020 school year in Turkey. A total of four out of the eight mathematics books for the different grades of primary education were randomly selected. The mathematics books MHG Publication (Kayhan Atalay, Özyıldırım Gümüş, Yaman, Özer & Şengil Akar, 2018) (first grade), Ministry of National Education Textbook (Apladı, Canbaz Kırıkcıoğlu & Cerit, 2019) (second grade), Ministry of National Education Textbook (Genç, Güleç, Şahin & Taşcı, 2019) (third grade), and Ata Publication (Özçelik, 2018) (fourth grade) were investigated to see whether they were gender fair.

2.3. Data Analysis

In this study, content analysis and chi-square tests were used. Firstly, content analysis was applied to summarise the data in frequencies tables. During content analysis, texts were read several times, and coding units were identified. While determining the codes for the texts (all the questions, explanations, exercises and solutions), the classification used by Piatek-Jimenez, Madison and Przybyla-Kuchek (2014) and Moser and Hannover (2014) was adopted. The pictures surrounding the text were used to clarify of the characters if to minimise the number of unknown codes. Then, by grouping codes, categaories were generated. Finally, a chi-square test was performed to explore if the differences in categories are significant regarding genders. The categories used for analysing the texts are presented in Table 1 below.

Table 1. *Categories Used in Analysis of Data*

Textual Codes
1 Frequencies of genders
2 Activities of genders
3 Parental roles
4 Occupations of genders
5 Composition of groups and dyads by gender
6 Locations of genders (indoors/outdoors)
7 Famous people or characters

A sample of the analysis for each code is given below.

2.3.1. Frequencies of Genders

Each name in the text was coded as that of a girl, a boy, a woman, or a man. If the name was unisex and there was no picture related to the text, it was coded as undefinable and was not included in the study. The use of a first name with 'Hanım' (addressing a woman, as in Miss/Mrs) or 'Bey' (like Mr.) was interpreted to indicate an adult. In addition, adults were described with kinship terms such as mother, aunt, father, or uncle. On the other hand, the use of only a first name was regarded as indicating a child. Moreover, when necessary, the pictures were used to decide on the characters. There was a focus on clothing (e.g. school uniform or suit) and physical characteristics (e.g. height, beard) to classify characters in pictures as children or adults. Examples are given below:

Sample analysis:

Let's determine the length of the line that Özgür draws on the paper. (4th grade, p. 11)

This was coded as a boy, because Özgür (a male name) was used alone.

Sample analysis:

According to the election of class representatives, Deniz became a class representative by getting more votes than the other candidates. (4th grade, p. 160)

Deniz is a unisex name. Therefore, the name was coded as undefinable.

Sample analysis:

Zeliha Hanım collected 1240 Turkish Liras. (4th grade, p. 41)

Zeliha (a female name) was used with Hanım. Therefore, the case was coded as a woman.

Sample analysis:

A watermelon seller has 67 watermelons. The seller sold 9 watermelons to the first customer. The seller sold 14 watermelons to the second customer. How many watermelons remain? (2nd grade, p. 99)

It was impossible to judge the gender of the seller from the text. Therefore, the case was evaluated with the picture next to the text (see Figure 1 below).

Figure 1. *Watermelon Seller*

Given the picture, the case was coded as a man.

2.3.2. Activities of genders

The activities that the characters were engaged in were coded as leisure context (e.g. social responsibility activities, having a picnic or carrying out cultural activities such as reading), school context (e.g. doing a project, doing homework, studying), daily life (e.g. eating, sleeping, shopping), and working life (e.g. teaching, working on a construction project, harvesting). Here also, when necessary, pictures were used to determine the genders of the characters. Some examples of the 'activities of genders' code are presented below:

Sample analysis:

Cemil has 25 kurus (Turkish currency). He wants to buy a pastry which is sold for 50 kurus from the canteen. Is the money Cemil has enough to buy a pastry? (2nd grade, p. 213)

As seen from the text, there was no expression for an adult after the character's name, and Cemil is a male name. He was in a shopping story. Therefore, the case was coded as 'a boy in a daily life context'.

Sample analysis:

Fisher Huseyin sold 25 kg anchovies, 18 kg sardines and 13 kg seabasses in the bazaar. How many kg fish did the fisher sell in total? (2nd grade, p. 257)

As presented in the text, the character was a male and an adult. He was selling fish. Therefore, the case was coded as 'a man in an occupational activity'.

Sample analysis:

Competitors are warming up before the marathon. (1st grade, p. 153)

It was difficult to determine the genders of the characters from the text. Therefore, the case was evaluated with the picture above it (see Figure 2 below).

Figure 2. *Racers*

There were four boys and one girl warming up, and the case was coded as 'a girl in a leisure time activity' and four instances of 'a boy in a leisure time activity' considering the picture.

2.3.3. Parental Roles

It was not necessary to prepare a default list for coding the parental roles. The roles of mother, father, grandmother and grandfather were directly incorporated into the coding system. Some examples of the 'parental role codes' are set out below:

Sample analysis:

How many tomatoes did Grandmother Sevcan peel? (1st grade, p. 75)

As seen from the text, the character was directly indicated by a kinship term, so the case was coded as 'a grandmother'.

Sample analysis:

My father buys 2 loaves of bread every day. Find how many loaves he buys in a week. (2nd grade, p. 168)

As understood from the text, the character was given directly as a father, and therefore the case was coded as 'a father'.

2.3.4. Occupations of Genders

Occupations of genders were also directly coded from the text. Moreover, when it was necessary, the pictures were used to determine the characters' genders. Some example analyses are set out:

Sample analysis:

Tailor Rahime sews 3 dresses in a week. Let's find how many dresses she will sew in a month. (2nd grade, p. 205)

The text shows that the character was a tailor and Rahime is a female name, so the case was coded as 'a woman tailor'.

Sample analysis:

Uncle post worker brings 6 letters to Cemile and 5 letters to Ayberk. How many letters does he bring in total? (1st grade, p. 122)

As is shown in the text, the character was a post carrier and described with a kinship term, uncle, and therefore the case was coded as 'a man post carrier'.

Sample analysis:

A simit seller sold 43 simits in the morning, 25 simits in the afternoon. Find how many simits the seller sold during the day (2nd grade, p. 82)

It was not possible to determine the seller's gender from the text. However, the gender of the character was clear in the picture next to it (see Figure 3 below).

Figure 3. *Simit seller*

Given the picture, the case was coded as 'a male seller'.

2.3.5. Composition of groups and pairs by gender

The composition of groups and pairs by gender was analysed by two codes. A person was a part of either a group (same-gender adult group, same-gender children group, same-gender adult and children group, mixed-gender adult group, mixed-gender children group, mixed-gender adult and children group) or a pair (an adult and an adult of the same gender, an adult and a child of the same gender, a child and a child of the same gender, an adult and a child of opposite genders, an adult and an adult of opposite genders, a child and a child of opposite genders). Some examples are presented below:

Sample analysis:

Doğa [a female name] was born on 14th November, Saturday. Eliz [a female name] was born one day after Doğa, Beren [a female name] was born one day before Doğa. Let's find Eliz and Beren's birthdays. (1st grade, p. 177)

As seen from the text, there were three female names and there was no expression to show that any of them were adults. Therefore, the case was coded as 'a same gender children group'.

Sample analysis:

Grandfather Lütfü and Grandmother Sevcan join a coach tour. (1st grade, p. 89)

From the kinship terms in the text, it is understood that there were two adults, and that one of them was female and the other one was male. Therefore, the case was coded as 'mixed gender, an adult and an adult'.

2.3.6. Locations of Genders

Locations of genders were analysed to determine whether the characters were presented indoors or outdoors. Examples of the analysis are given below:

Sample analysis:

There are 57 story books and 36 novels in Zeynep's bookcase (3rd grade, p. 78)

A female was pictured looking for a book in her bookcase (see Figure 4 below) and there was no expression after her name to show she was an adult. Therefore, the case was coded as 'a girl indoors'.

Figure 4. *Location of Zeynep*

Sample analysis:

Little brother Kerem and his big brother went to the bazaar. (3rd grade, p. 168)

Kerem (a male name) and his brother go out shopping, and therefore the case was coded as 'a boy outdoors'.

2.3.7. Famous People and Characters

The genders of famous people and characters were analysed. Examples of the analysis are given below:

Sample analysis:

Karagöz and Hacivat [traditional Turkish shadow play characters], starting at 14.15 and ending at 15.25, lasts … minutes. (3rd grade, p. 180).

Figure 5. *Karagöz and Hacivat*

As is known and can be seen from the Picture below the question (see Figure 5 above), Karagöz and Hacivat are male characters. Therefore, the case was coded as two instances of 'male character'.

Sample analysis:

We prepared puzzles about mass balancing for you. While preparing the puzzles, we were inspired by the balancing principle that the Greek scientist Archimedes put forward. (3rd grade, p. 200).

It is known that Archimedes is a famous male scientist. Therefore, the case was coded as 'a famous male person'.

2.4. Reliability

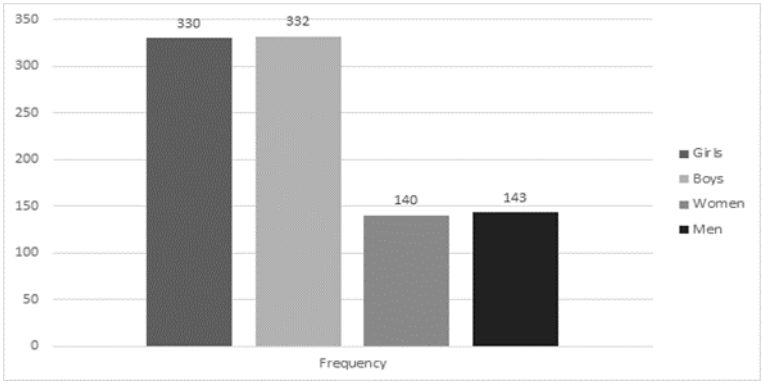
Parallel to the coding system, a manual was prepared with explanations for each code. The analyses were conducted with the MAXQDA 20 program. Two colleagues coded independently. The coders first analysed the text. When there was no gender indication, but the picture had an indication, the picture surrounding the text was used. Inter-coder reliability was computed for the 3rd-grade mathematics book, which was selected randomly. Miles and Hubermann's (1994) formula was used to assess agreement between the two coders. Inter-coder reliability for the study was calculated as 73%. According to Miles and Huberman (1994), anything above 70% for reliability is acceptable. Therefore, the results obtained from the analysis were considered to be reliable.

3. Findings

This section shows the study results using descriptive statistics and graphs to show the number of cases and whether gender equality was present. The chi-square test was used to examine the presence of significant differences between females and males.

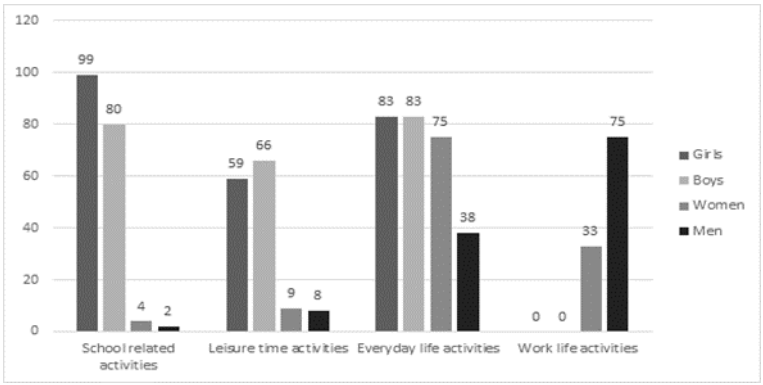
3.1. Frequencies of Genders

In the primary school mathematics textbooks, 945 characters were coded in total. For two of them, it could not be decided whether the character was male or female. As shown in Graph 1 below, there were a total of 283 adults (140 women, 143 men) and 662 children (330 girls, 332 boys). Even though children are depicted much more often than adults, it can be seen that none of the comparisons for girls/boys (χ^2=0.00, df=1) and women/men (χ^2=0.03, df=1) revealed a significant dominance of either gender group.



Graph 1. *Frequencies of Genders*

3.2. Activities of Genders 708 activities were coded in total in the primary school mathematics books. 464 activities were coded for children (235 for girls, 229 for boys), and 244 activities were coded for adults (121 for women, 123 for men).



Graph 2. *Activities of Genders*

As shown in Graph 2, girls were shown most often in school-related activities, then in daily life activities and then in leisure time activities. Boys were presented most commonly in daily life activities, then in school-related activities and then in leisure time activities. Statistical analysis shows that none of these activities has reliable differences in frequencies between the genders. The frequencies of the five most frequent activities that girls and boys were shown engaged in were compared (mathematical, cultural, sports, food-related and shopping activities). Most of these activities do not show remarkable differences in frequencies between genders, but a significant difference is found between the genders for sports activities. The boys do more sports activities than the girls ($\chi 2=5.48$, df=1, $p<0.05$).

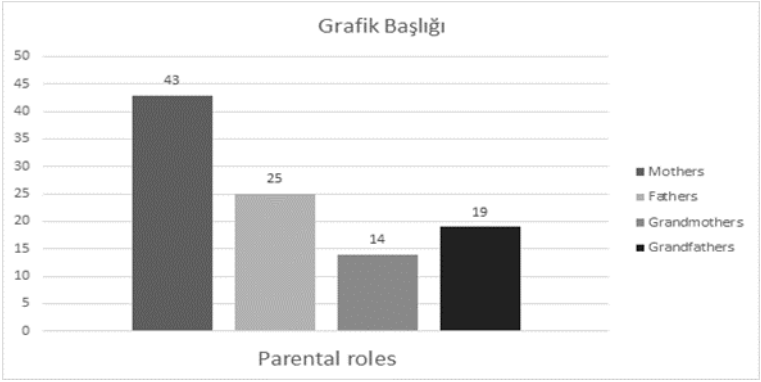
As seen from Graph 2 above, women were most commonly presented in daily life activities, then in work life activities, then leisure time activities and lastly school-related activities. Men were depicted most commonly in work life activities, then in daily life activities, then leisure time activities and lastly school-related activities. The frequencies of the daily life activities ($\chi 2=12.11$, df=1, $p<0.05$) and work life activities ($\chi 2=16.33$, df=1, $p<0.05$) differ reliably between the genders. While women were shown less often in work life activities than men, they were mostly presented performing daily life activities. The frequencies between the women and the men for the five most frequent activities shown in the primary school mathematics textbooks (kitchen-related activities, shopping activities, dealing with children activities, construction work activities, and selling activities) were compared. There were notable gender differences in most comparisons. First, a significant difference was found for kitchen-related activities ($\chi 2=9.78$, df=1, $p=0.05$). Even though statistical analysis cannot be performed for the activities of dealing with children (women 14, men 0) or performing construction work (women 0, men 12), the gap between the genders is quite clear. The women were more often engaged in kitchen-related activities and dealing with children than the men, and the men pursued construction work activities more often than the women. Nevertheless, neither shopping nor selling activities show reliable differences in frequencies between the genders.

To summarise, reliable gender differences were observed for daily life activities and work life activities concerning the frequencies with which the women and the men engaged in them. In addition, considering the

differences in the most frequent activities for each gender, it can be seen that the women were more often engaged in kitchen-related activities and dealing with children than the men, and that the men pursued construction work activities more than the women. On the other hand, no gender difference was observed in activities with respect to girls and boys. However, a significant difference is found in one of the most frequent activities, sports activities. It was observed that boys are more often presented taking part in sports activities than girls.

3.3. Parental Roles

101people filling parental roles were found in the primary school mathematics textbooks. Graph 3 below presents the significant dominance of mothers (43) compared to fathers (25) ($\chi 2=4.76$, df=, $p<0.05$), whereas no reliable difference was found for the frequencies of grandmother (14) and grandfather (19) ($\chi^2=0.75$, df=1).



Graph 3. *Parental Roles*

To summarise, the dominance of mothers compared to fathers can be clearly seen, but balanced numbers of grandmothers and grandfathers were found.

3.4. Occupations of Genders

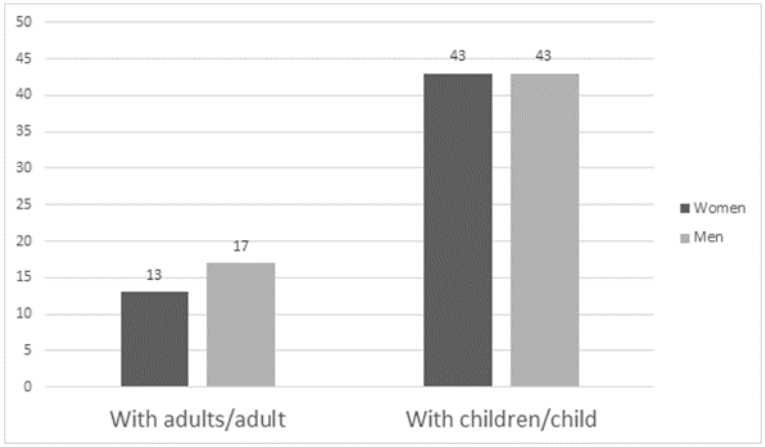
In the primary school mathematics textbooks, no occupational roles were determined for the children, but 106 individuals playing occupational roles were coded for adults. As Graph 4 (below) shows, men were represented significantly more often in jobs than women ($\chi 2=9.66$, df=1, $p<0.05$). Additionally, a larger variety of occupations was found men (36) than women (21). This difference is also significant ($\chi 2=3.94$, df=1, $p<0.05$).

Graph 4. *Frequencies and Variations of Ccupations*

To sum up, men were more often presented at work than women, and men's occupations were more diverse than women's.

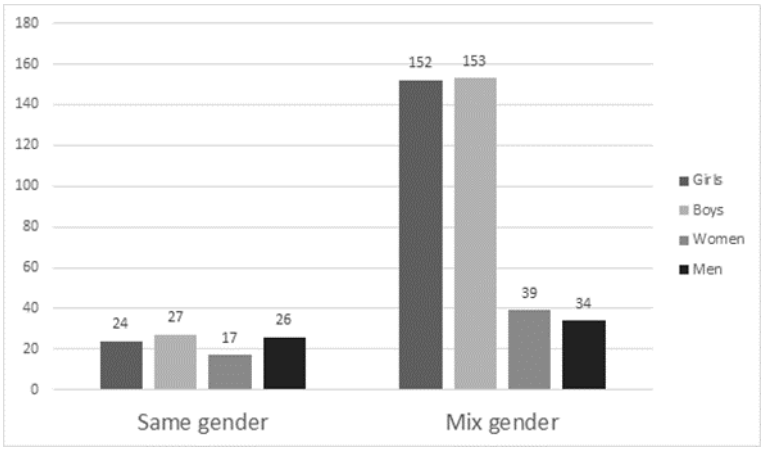
3.5. Composition of Groups and Pairs by Gender

The study examined the genders among groups and pairs in the primary school mathematics textbooks. As shown in Graph 5 below, women and men were shown equally with children or a child, but men were more often depicted with adults than women; however, this difference was not significant ($\chi^2=0.53$, df=1).



Graph 5. *Composition of Adult/Children Groups*

To explore whether the characters were presented with people of the same/opposite gender, the gender compositions of groups and pairs were examined. Graph 6 belows shows that characters were mostly depicted in mixed-gender groups/pairs in the primary school mathematics textbooks. Girls, boys and women were significantly more often shown in mixed-gender compositions than in same-gender groups (girls; χ^2=93.09, df=1, p<0.05; boys χ^2=88.20, df=1, p<0.05; women χ^2=8.64, df=1, p<0.05). Similarly, men were presented more often in mixed-gender than in same-gender compositions, but this difference was not found to be significant (χ^2=1.06, df=1).

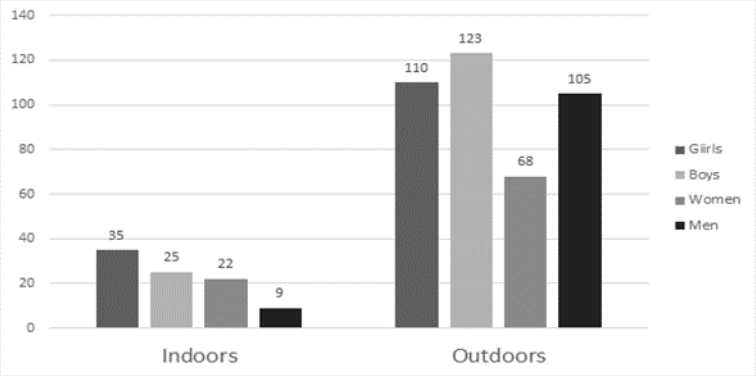


Graph 6. *Composition of Groups*

To sum up, the analyses revealed that adults were equally commonly depicted with children; however, even though there is no significant difference here between women and men, men were shown with adults more often than women. Moreover, children and adults were mostly presented in mixed-gender groups/pairs. These differences were reliable for girls, boys and women, but not for men.

3.6. Locations of Gender

To test whether the genders were systematically related to the locations in which the characters were presented, the study examined whether the characters were performing their activities indoors or outdoors. 543 locations were coded in total, but 43 of these could not be defined. 500 locations were analysed for indoor/outdoor information. As seen in Garph 7 below, the characters were significantly more often shown outdoors than indoors (girls; χ^2=38.79, df=1, p<0.05; boys χ^2=68.89, df=1, p<0.05; women χ^2=23.51, df=1, p<0.05; men χ^2=80.84, df=1). Additionally, comparisons regarding genders were analysed to discover whether there was a significant difference between the locations of different characters. While women were more often presented indoors than men (χ^2=5.45, df=1, p<0.05), and men were more often depicted outdoors than women (χ^2=7.91, df=1, p<0.05), that kind of difference was not found for girls and boys (indoor χ^2=.1.66, df=1; outdoors χ^2=0.72, df=1)).



Graph 7. *Locations of Genders*

To sum up, the child and adult characters were all significantly more often depicted outdoors. Their gender did not affect whether they were shown in an indoor or an outdoor location for the children. However, the analyses revealed a significant difference in how the genders of adults related to the locations. The results show that women were depicted indoors significantly more often than men, and men were depicted outdoors significantly more often than women.

3.7. Famous People and Characters

Six famous people and characters were found in the primary school textbooks, and all were male. Three of them were famous people: the founder of the Turkish Republic, Gazi Mustafa Kemal Atatürk; a scientist, Archimedes; and an architect, Mimar Sinan. The others were traditional Turkish characters. Two of these were the shadow play characters, Hacivat and Karagöz, and the other was a joke character, Nasreddin Hodja.

4. Conclusion and Discussion

Numerous studies have attempted to examine gender representations in textbooks from the early period of the Turkish Republic until today. Common conclusions from these investigations have been the predominance of males, and traditional role allocations for occupations and activities (Esen, 2007). Although there was some movement towards more gender fairness at the beginning of the present century, textbooks in Turkey continue to reproduce gender roles unhealthyly (Gümüşoğlu, 2008). The present study aimed to investigate gender fairness in the primary school mathematics textbooks that currently in use in Turkey, examine the frequencies with which female and male characters are presented, and study their activities and the professional and parental roles in which they are engaged. Furthermore, the study investigated where and with whom female and male persons were depicted. The genders of famous people and characters in the textbooks were also examined.

In contrast to the results asserted by many researchers (Bursuc, 2013; Can, 2009; Çubukçu & Sivaslıgil, 2007; Gouvias & Alexopoulos, 2018; Kırbaşoğlu Kılıç & Eyüp, 2011; Moser & Hannover, 2014; Özkan, 2013; Tang, Chen & Zhang, 2010; Ullah, Ali & Naz, 2014), this study found a balanced representation of males and females. In the mathematics textbooks, children were depicted more often than adults, girls were shown as frequently as boys, and adults were equally likely to be presented as female or male. As Porreca (1984) states, the implicit message of fewer females appearing in textbooks is that females are not sufficiently important to be included. In this regard, it is possible to consider the textbooks to be gender fair. However, to ensure gender equality in textbooks, there is more to be done beyond presenting a balanced representation of males and females, because the content may be biased in various ways.

The detailed analysis of the activities revealed that the indication of the girls' and the boys' activities did not restrict them to the traditional gender stereotypes. The only exception was for sports activities. In conformity with the stereotype, boys were portrayed more often than girls in sports activities. Also, in parallel to earlier studies (Asan, 2006; Bursuc, 2013; Çelik, Aydoğan Yenmez & Gökçe, 2019; Demirel, 2010; Esen Severge, 1998; Kasa & Şahan, 2016; Sarıtaş & Şahin, 2018; Vatandaş, 2011; Yasin, Hamid, Othman, Abu Bakar, Hashim & Mothi, 2012; Yıldız, 2013), the activities of the women and men depicted in the textbooks were stereotypically gendered. It was observed that in the textbooks, activities were allocated in a traditional way, with women

engaged in child care and kitchen-related activities and men doing construction work that required physical strength.

Earlier textbook research has demonstrated that males stereotypically occupy a wider range of social and professional roles and women are portrayed mainly in domestic and nurturing roles (Bursuc, 2013; Çelik, Aydoğan Yenmez & Gökçe, 2019; Çubukçu & Sivaslıgil, 2007; Demir & Yavuz, 2017; Gouvias & Alexopoulos, 2018; Kasa & Şahan, 2016; Kırbaşoğlu Kılıç & Eyüp, 2011; Köseler, 2009; Kükrer & Kıbrıs, 2017; Moser & Hannover, 2014; Yaylı & Kitiş Çınar, 2014; Sarıtaş & Şahin, 2018; Yasin et al., 2012; Yıldız, 2013). In this study, the analysis of the adults' occupational and parental roles gave similar results to the earlier research. Men were presented at work and performing different jobs more often than women, while many more women than men were depicted in a parental role in the textbooks. A woman is still pictured in textbooks playing the family role of the nurturer at home, to support the man who is the breadwinner. When it comes to the public sphere, women assume caregiving roles such as nurses or teachers. However, the presentation of an equal prominence for women and men in professional settings and a variety of occupations in textbooks may encourage girls to plan a full range of career options (Yasin et al., 2012), which must be the main purpose of education.

Previous textbook research has rarely investigated how males and females are presented with other people. The few who have done so only looked at whether adults were shown in interactions with children or adults (Esen & Bağlı, 2002; Esen Severge, 1998). Unlike earlier studies, this study found equal numbers of women and men being shown with children. However, even though this difference was not significant, women appeared with adults less frequently than men, which is very similar to what was found in earlier studies. Again, this can be considered a reflection of the stereotypical role of the woman as a caregiver for children. It is also not surprising that if men are mostly portrayed in business life then they are less often shown interacting with children. Going beyond the earlier textbook studies conducted in Turkey, the study aimed to find out whether adults and children were shown in same-gender or mixed-gender groups/pairs. As in the earlier research, the study found that adults and children all appeared more often in mixed-gender than in same-gender groups/pairs (Bursuc, 2013).

The detailed analysis of locations did not yield any indication of gender bias in terms of being depicted in an outdoor or an indoor location. Like earlier research, all characters were more often shown outdoors (Moser & Hannover, 2014). However, when the frequencies of women and men in outdoor/indoor locations were compared, it was seen that, while women were presented indoors significantly more often than men, men were presented outdoors significantly more often than women. In line with many studies, the stereotypical location of a woman is still at home, and this reveals a deep-rooted belief that pushes women to the edge of social life, almost subordinating them (Özdemir, 2018; Esen & Bağlı, 2002; Sarıtaş & Şahin, 2018; Yasin et al., 2012; Yıldız, 2013).

The design of the study also compared the frequencies with which characters and famous people of different genders were shown. As found in earlier research (Gouvias & Alexopoulos, 2018; Yıldız, 2013), male persons and characters were shown more often than female ones. Although textbooks can take advantage of the opportunity to expose students to female role models, according to the study by Piatek-Jimenez, Madison and Przybyla-Kuchek (2014), which is very similar to the present study, it is difficult to say that textbooks are utilising this opportunity.

Considered as a whole, the findings of the study prove the existence of a relatively egalitarian discourse in mathematics textbooks. The proportions of females and males were equal compared to previous studies, such as the study by Kırbaşoğlu Kılıç and Eyüp (2011) (who reported that only 36.3% of all characters presented in textbooks were female). Also, no gender differences in the activities, compositions, and locations for children were found.

However, imbalances regarding men and women engaging in work life and daily life activities and occupational and parental roles were seen in the mathematics textbooks. Raising children and performing kitchen-related activities were shown to be tasks mostly done by women, while occupational activities were mostly related to men. It is possible to say that this imbalance is in parallel with real-life gender differences. Therefore, it could be argued that textbooks, which fulfil the socialisation function by presenting socially accepted norms in an explicit or implicit way (Esen & Bağlı, 2002), naturally reflect this reality. According to the kernel of truth theory, gender stereotypes have some empirical validity, but stereotypes do not simply

reflect real-life differences: they exaggerate them (Basow, 1992). Describing a woman as a mere 'mother and wife', and a man as 'working outside', provides a very limited framework for girls' and boys' educational and professional ideals and options (Tan, 1979). As Lee (2018) states, these stereotypes shown in textbooks imply that males are superior to and stronger and more powerful than females in society. Girls who see women in textbooks only as mothers or wives or in low-income and unskilled jobs cannot find a motivational model to study hard and plan for a career (Leach, 2003).

In fact, since there are limited examples of women working in a profession, girls do not have the opportunity to see what education can bring in terms of their future (Hablemitoğlu, 2004). Therefore, textbooks should contribute to the individual development of children by offering as wide a range of models and activities as possible, rather than limiting the possibilities (Esen & Bağlı, 2002). Hence, it would be desirable that future textbooks not only include socially accepted norms and the reality of life, nor exaggerate these, but also provide children with more egalitarian and democratic structures by, for example, presenting more female models in work life and, conversely, more males in parental roles and kitchen-related activities.

Additionally, it should be noted that this study is limited to investigate gender issues in primary school mathematics textbooks in 2019-2020. Thus, it is needed to conduct some research beyond this. For instance, in the future (5 years, 10 years and 20 years later), this study can be repeated by considering the textbooks of that year in order to see whether the gendered elements in the textbooks and the proportions of these elements have changed. It can be determined if there is a social change in sexism and if this change is included in the textbooks. Other educational materials such as crammer books, and bulletin boards can also be investigated regarding gender stereotypes. Besides, it is known that as age groups increase, gender stereotypes become more clear. Textbooks can also be examined in higher grades as they may affect this result.

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A Study on the Relationship Between Social Media Addiction and Self-Regulation Processes among University Students*

Ümit SAHRANÇ[1], Esin DUÇ URHAN[2]

[1]*Faculty of Education, Educational Sciences, Sakarya University, Sakarya, Turkey* *0000-0002-2407-7745*

[3]*Institute of Social Sciences, Istanbul Kent University, Istanbul, Turkey* *0000-0002-3656-5578*

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ABSTRACT

In this research, the relationships between social media addiction (SMA) and self-regulation levels among university students were investigated. A sample of 329 (234 women, 95 men) university students with the age range 18-29 were selected. SMA and self-regulation scales were administered to the sample. The multiple regression analysis revealed that SMA was predicted by self-monitoring; self-evaluation and self-reinforcement did not predict SMA. The regression model accounted for 17% of the variance in SMA, while self-regulation predicted the SMA levels and the regression model accounted for 7% of the variance in SMA. Independent sample t test demonstrated that there were no gender differences between the means of SMA and self-regulation. But, there was a significant difference between the means of SMA of working students and non-working students, non-working students SMA mean scores were higher.

Keywords.
Y, Z, Alpha generations; social media addiction; self-regulation; self-monitoring; self-evaluation; self-reinforcement

1. Introduction

The pandemic has proven how indispensable the use of technology and especially the use of the internet is in all areas of life including social media. Social media is a web-based technology that changes the way people communicate by improving interactive communication (Cabral, 2011). It is defined as any kind of internet media tools that individuals can jointly structure and share content. These tools are blogs, social networking sites like Facebook, Instagram, information and content sharing sites like Wiki(s), and Snapchat, interactive game sites like World of Worldcraft, micro blogs such as Twitter (Kuss and Griffiths, 2017). However, it is in a rapid change through new platforms, tools and features added continuously (Van den Eijnden, Lemmens, and Valkenburg , 2016). Another definition is the systems on the internet that let individuals configure a limited or fully open profile within a certain platform, to see the list of other users and to show the connections of other individuals in this platform (Boyd and Ellison, 2007).

The use of such platforms increases year by year. According to the Digital report (January, 2021), while more than 4.66 billion people of 7.83 billion world population have access to the internet (59.5% of the total world population), the rate of internet usage has increased by 7.3% in January 2021 compared to January 2020 (316 million new users, 4.66 billion users in total). The increase in the use of social media is 13.2% (490 million new users), and over 4.20 billion people use social media (53.6% of the total world population). 98.8% of individuals using social media use social media with smart phones. Almost all people or current generations use these platforms, including Y, Z, and Alpha.

[1]Corresponding author's address: Sakarya University, Faculty of Education, Hendek/Sakarya
e-mail: sahranc@sakarya.edu.tr
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The population called as the Y generation (born between 1981-1994) feels social pressure of being in constant contact with technology, therefore they depend on social media (Cabral, 2011). Beyond that, Generation Y and Z (born between 1995-2010) express their ideas, social identities and instant emotions by finding a "*meme*" words or images through social media (Ramadlani and Wibisono, 2017), and the Alpha generation (born after 2011) is not different from the Z generation (Nagy and Kölcsey, 2017; Swanzen, 2018). In sum, generations Y, Z and Alpha are using social media with increasing frequency and intensity while the use of social media may turn into a kind of addiction.

1.1. Social Media Addiction

Addiction is considered as a behavioral problem and chronic brain disorder (Smith, 2012). Its final definition is "a treatable chronic medical disease that involves complex interactions between brain connections, genetics, environment and the individual's life experiences in the form of performing compulsive and frequent behaviors or taking substances, despite its harmful consequences" (ASAM board of directors, 2019). In this context, addiction includes continuous inability to be deprived, impaired behavioral control, decreased awareness of important problems in behavior and interpersonal relationships, an increased hunger or craving related to rewarding behavior, experience or substance, and dysfunctional emotional responses. (ASAM, 2011; cited in Smith, 2012).

Social media addiction (SMA) is difficult to define, but it is categorized as a type of internet addiction of behavioral addiction in general addiction. In the literature, some synonyms are interchangeably used as online social network site addiction (Andreassen, 2015), SMA (Hou et al., 2019), internet communication disorder (Wegmann et al., 2018). Hou et al. (2019) defines SMA as excessive and intense use of social media applications that suppress life activities and damage "real life", interpersonal relationships and performance. Ostendorf, Wegmann, and Brand (2020) mentioned about SMA as intense social networking, characterized by reduced usage control and adverse consequences. Andreassen and Pallesen (2014) define SMA as social networks as thinking intensely, the urge to use or be online at a high level, social and professional activities, interpersonal relationships, well-being and spending too much time to disrupt health. Similarly, Kuss and Griffiths (2017) define it as the intense and obsessive use of social media platforms, although it causes impairments in all areas in the long term. On the other hand, there are no diagnostic criteria for SMA in the Diagnostic and Statistical Manual of Mental Disorders (DSM–5) (APA, 2013) and International Classification of Diseases (11th revision; ICD-11). However, it has similar symptoms with other addictions including chemical addiction (Andreassen, 2015; Kuss and Griffins, 2011). Also, internet addiction treatment protocols can be applied in SMA (Andreassen and Pallesen, 2014). In fact, psychotherapeutic and pharmacological treatment approaches can be applied similarly in chemical and behavioral addiction (Grant et al., 2010).

Griffiths (2005; cited in Griffiths, Pontes and Kuss, 2016) states that any behavior can be considered as an addiction if it fulfills six criteria which may be adopted to SMA. These include cognitive salience, mood change, development of tolerance, withdrawal symptoms, conflict, and relapse. *Cognitive salience* includes cognitive distortion and the feeling of craving, obsessively thinking about being on social media. *Mood change* means "high/buzz" go for pleasure or conversely, escape or numbing. *Tolerance* is the desire to spend more time because the time spent on social media is not enough.it also means staying longer than before in order to capture the level of enjoyment (Jo et al., 2019). *Withdrawal symptoms* are unpleasant feelings in case of withdrawal from social media. *Conflict* is the situation in which the person conflicts with the individuals around her/him, "everyday" and compulsory activities, and within herself/himself. *Relapse* is that although he/she "quit" the social media, if he/she "starts" again, the person quickly exhibits SMA symptoms with previous frequency and intensity. It is also possible to talk about loss of control, hiding, escape situations (Kubey, 1996, cited in LaRose, Linn and Eastin, 2003). *Loss of control*, as can be understood from *relapse* and *conflict*, is the inability of the individual to control her/his addiction. *Hiding* is the concealment of addictive behavior from others. *Escape* is trying to run away from dysphoric feelings such as depression, anxiety, guilt.

Considering the comorbidity and the effects of SMA, because of spending much time on social media, it affects the health, sleep quality, relationships, well-being (Andreassen and Pallesen, 2014), and work (Mansi and Levy, 2013). People with SMA may use social media to escape loneliness and depression (Davis, 2001). Social anxiety and depression caused by the necessities of real social life can accompany SMA (Tang and Yogo, 2019; Meena et al., 2015). Similarly, SMA is associated with social anxiety, self-regulation and academic

procrastination (Durak, 2018). In addition, less than 1/4 of people with SMA have depression, anxiety and mania, and more than ¼ have food addiction and shopping addictions (Tang and Koh, 2017). However, people with SMA may experience anxiety because of missing something online, maintaining relationships, instant social comparisons, and conflicts due to openness to everyone (Fox and Moreland, 2015). Meanwhile, SMA is related to academic procrastination, self-regulation, and social anxiety (Durak, 2018). In addition, university students with low academic success have more SMA symptoms (Baz, 2018; Demir and Kumcağız, 2019).

The impairments related to SMA in professional life (Mansi and Levy, 2013); academic performance, health and social well-being (Ndubuaku et al., 2020), interpersonal relationships, and responsibilities related to social activities (Andreassen and Pallesen, 2014) suggesting that these individuals may have low ability to plan and organize their own lives. In this context, the importance of individual characteristics such as monitoring how often and intensely the person use social media, controlling one's own behavior via evaluating the social media usage, and adjusting self-reinforcement may be important. Similarly, Tang and Koh (2017) stated that people with SMA neglect their personal and professional life and that SMA causes deterioration in social activities, well-being and health, which may mean that the individual loses her control. Neuropsychological research also suggests that the reduction in prefrontal control processes may be evidence of decreased control over excessive internet use (Brand, Young and Laier, 2014). Based on these possible evidences put forward by many researches as in the I-PACE model (Brand et. Al., 2016) which propose impairment in controlling decision-making and self-inhibiting, brings the mind that in the sense of the individual's ability to regulate his/her own behavior via monitoring, evaluating and appropriate reinforcing can be important to cope with SMA.

1.2. Self-regulation

Self-regulation means the internal processes in which a person exercises control over the direction, continuity and intensity of his/her thoughts, emotions and actions in order to succeed a goal (Kanfer and Kanfer, 1991), or the planned and cyclically adapted thoughts, feelings and actions produced by the person to achieve personal goals (Zimmerman, 2000). Regulation is the modulation of an individual's thought, affect, behavior, and attention automatically or consciously through specific tools and meta-skills (Karoly, 1993; p. 25). Self-regulation includes a series of intrinsic or transactional processes that guide the individual in achieving her/his goal despite changing time and conditions (Karoly, 1993). In this context, the individual needs to regulate emotions thoughts, behaviors (Sage et al., 2017), and external stimuli, unfolds in conjunction with unconscious factors (Karoly, 1999). The individual with high self-regulation skills can continue on her/his way to reach her/his predetermined goals despite external averting stimuli (Karoly, 1993). Self-regulation includes the motivational and behavioral processes to apply self-efficacy, personal agenda and self-beliefs (Zimmerman, 1995).

Kanfer's (1970) self-regulation model has three stages. Focusing on and monitoring one's own behavior is the *self-monitoring* stage; evaluation of one's own learning and behavior by considering her own criteria and values via comparing her goal and current situation is the *self-evaluation* stage; and using intrinsic or extrinsic reinforcements as motivational tools is *self-reinforcement stage*. Self-monitoring also refers to the attention given to certain aspects of one's own behavior or to environmental events associated with the purpose. Rothbaum, Weisz, and Snyder (1982) mention two processes of self-regulation that constitute adaptation to the life. While the *primary control* is to try to make the environment suitable for himself/herself by changing it; *secondary control* is to try to change himself/herself to adapt to the environment. Self-regulation is largely related to the secondary control. Individuals cannot constantly deal with all aspects of behavior, but they need to be selectively concerned with specific dimensions of behavior and events. With self-monitoring, people learn about other people and situational factors (Kanfer and Kanfer, 1991).

According to Bandura (1986), self-regulation is three-dimensional cyclic interaction process: personal, behavioral and environmental. This process is quite similar to Kanfer's (1970) three-stage self-regulation model. It involves the individual to monitor his/her own behavior (self-monitoring), judge according to personal and social standards (self-judgement), and apply these processes to self-reactions to adjust his/her own behavior (self-reaction) (Bandura, 1991). Zimmerman (2000) reports that self-regulation includes three processes to achieve goals: behavioral, environmental and implicit. While behavioral self-regulation includes self-monitoring and strategically adjusting the performance process; environmental self-regulation involves

observing and adjusting environmental conditions. Implicit self-regulation involves observing and adjusting cognitive and affective states.

Self-regulation of behavior includes setting goals and objectives, and observing and evaluating behavior (Endler and Kocovski, 2000). Errors in self-monitoring hinder healthy self-evaluation (Kanfer and Kanfer, 1991). The individual may have a conflict between her/his goal and his/her behavior, or setting goals or having conflicting goals (Kanfer and Kanfer, 1991; Karoly, 1993; Baumeister, Heatherton and Tice, 1994). This contradiction can cause problems in monitoring behavior. It causes self-evaluating error and as a result self-regulation error.

1.3. The present study

As all behavioral addictions, SMA addiction seem to be a growing problem among university students as well as other ages. It sometimes hamper students with SMA to do their educational activities as an addictive behavior. In literature, discontinuing self-monitoring and self-evaluating is considered as a critical problem in addictive behaviors (Endler and Kocovski, 2000). Addictive behaviors can be seen as self-regulation errors, including pathological gambling (Wilson et al., 1989). Indeed, Durak (2018) stated that individuals with low self-regulation levels have higher SMA, Rahman et al. (2020) determined that individuals with high self-regulation levels can control their use of social media. Similarly, there is a relationship between self-regulation errors and pathological internet use (LaRose, Lin and Eastin, 2003). In this context, SMA can also be considered as a self-regulation error.

In the related literature, relationships between internet use and SMA (Hou et al., 2019; Wegmann, Müller, Ostendorf and Brand, 2018; Andreassen and Pallasen, 2014; Kuss and Griffiths, 2017) and SMA and self-regulation (Durak, 2018; Rahman et al., 2020) were examined. However, as far as we reviewed the literature, the relationships between SMA and self-regulation processes, self-monitoring, self-evaluation and self-reinforcement have not been investigated. For this reason, determining how the self-regulation processes are related to SMA may enlighten other researches and SMA intervention programs. Therefore, in this study, it is aimed to examine the relationship between SMA and self-regulation processes.

The study group of this research consists of university students. Examining the relationship between SMA and self-regulation processes of university students may be important in terms of psycho-social support given to them. Most students can easily reach medico-social units and psychological counseling centers at the universities. In these units, it is possible to reach students with SMA. Mental health-care workers may focus on self-regulation processes during the psychological aid with the help of the results of this study. Such a focus may shorten the intervention time and it also may give a better understanding of improving the psychological help process. In this context, it is thought that investigating the predictive relationship between self-regulation processes. For this aim, the following questions were asked within the study:

- Do the scores of self-reinforcement, self-monitoring, and self-evaluation processes predict the total score of SMA?
- Do total scores of SMA and self-regulation statistically differ according to gender and working status?

2. Methodology

2.1.Research Model

Since the relationships between SMA and self-regulation processes are examined, the model of this research is a relational survey model that aims to determine the change and/or the degree of change between two or more variables within the scope of quantitative research (Karasar, 2013).

2.2. Research Sample

The study group was consisted of 329 students (234 women, 95 men; 181 associates, 136 undergraduates, 12 graduates) studying at various universities in Istanbul via convenient sampling (Cohen, Manion and Morrison, 2007; Dörnyei, 2007). Their ages were between 18-29 ($\bar{X}$=21,2; *sd*=2,3).

2.3. Data Collection Tools and Procedure

Demographic information form including gender, working status, social media account information, the SMA Scale - Adult Form and the Self-Regulation Questionnaire were used to collect the data.

Social Media Addiction Scale - Adult Form (SMAS-AF): The scale was developed by Şahin and Yağcı (2017) to determine the SMA of individuals aged 18 and over. It consists of 20 items with two sub-scales: virtual tolerance (trying to get pleasure from more social media use) and virtual communication (preferring social media communications rather than other type communications). High scores indicate higher perceived SMA. Confirmatory factor analysis revealed that the scale had a good fit ($\chi 2$=7051,32; *sd*=190, *p*=0,00; fit index values: *RMSA*=.059; *SRMR*=.060; *NFI*=.59; *CFI*=.96; *GFI*=.90; *AGFI*=.88). The factor loads are between .61 and .87. Cronbach Alpha internal consistency coefficient for the overall scale .94; and .92 for the virtual tolerance, and .91 for the virtual communication. Test-retest reliability coefficients for the overall scale.93; .91 for the virtual tolerance and .90 for the virtual communication sub-dimension (Şahin and Yağcı, 2017). For this study, the scores of sub-scales, neither the virtual tolerance nor virtual communication were not calculated, because the aim was related to total SMA scores as a whole.

Self-Regulation Questionnaire: The scale was developed by Brown, Miller, and Lawendowski (1999) and adapted into Turkish by Aydın, Keskin and Yel (2014). It consists of 51 items with 3 sub-scales (self-monitoring, self-evaluation and self-reinforcement). The scores of 198 and above from the scale are at a high level; scores between 160 and 197 are moderate, and scores from 159 and below indicates a low level of self-regulation capacity. The factor loads are between .38 and .68. The Cronbach Alpha internal consistency coefficient is .87 for the overall scale, .87 for self-monitoring, .60 for self-evaluation, and .88 for self-reinforcement (Aydın, Keskin and Yel, 2014).

2.4. Procedure

2.4.1. Ethical Considerations

Before the research, the permission of Istanbul Kent University Ethics Committee Approval was asked and taken. Later, permissions for the use of scales were obtained via e-mail from the authors. The scales were administered to anonymous university students who voluntarily participated and completed the informed consent form. The measures applied face to face before the pandemic, May 2019. Thus all students were participated voluntarily.

2.5. Data Analysis

37 of 366 data were excluded from the analysis because of improper filling. For regression analysis, regression assumptions were checked. Mahalanobis D^2 was calculated and 23 data were removed as outliers. As a result, 306 set of data left. The values of *VIF* less than 10 (Myers, 1990) and the *CI* less than 30 (Belsley, 1991) indicating there was no multi-collinearity. Also, kurtosis and skewness scores were between -2 and +2, so parametric tests were applied assuming that the sample scores were normally distributed (George and Mallery, 2010). Table 1 shows values related to regression assumptions.

Table 1. *Results about the Assumptions of Normal Distribution and Regression Analysis*

Variables	*Skewness*	*Kurtosis*	*VIF*	*CI*
SMA	-.09	-.29		1.000
Self-regulation	-.03	.08	1.00	17.83
Self-monitoring	-.25	.11	1.22	9.37
Self-evaluation	-.04	.21	1.1	16.23
Self-reinforcement	-.73	1.09	1.22	27.83

As far as we reviewed the literature, there was no study in the literature to determine to what extent self-monitoring, self-evaluation and self-reinforcement predict SMA. The main purpose of this study was to determine to what extent the processes of self-regulation predict SMA. In this regard, regardless of the sub-scales of the SMA scale, SMA total scores were considered as the dependent and the predicted variable. Therefore, Pearson correlation coefficient was utilized to determine the relationships between variables. Multiple regression analysis was conducted to determine whether self-regulation processes predict SMA or not, and simple linear regression analysis was used to determine whether the total self-regulation scores

predict SMA (Karasar, 2013). Meanwhile, independent samples t-test was applied to determine mean differences according to gender and working status of individuals.

3. Findings

As seen Table 2, self-regulation (total) and SMA (r=-.26); and self-monitoring and SMA (r=-.40) are significantly and negatively correlated. However, significant correlations were found between self-regulation (total) and self-monitoring (r=.80), self-regulation (total) and self-evaluation (r=-.20), self-regulation (total) and self-reinforcement (r=.86); self-monitoring and self-evaluation (r=-.25), self-monitoring and self-reinforcement (r=.40).

Table 2. *Descriptive Statistics and Correlations*

Variables	***1***	***2***	***3***	***4***	***5***
SMA	1				
Self-regulation (total)	-.26**	1			
Self-monitoring	-.40**	.80**	1		
Self-evaluation	.09	-.20**	-.25**	1	
Self-reinforcement	-.07	.86**	.40**	-.25**	1
M	56.37	178.94	60.51	11.19	107.24
SD	13.41	20.17	11.42	2.09	13.31

**$p < 0.01$

As seen Table 3, in the regression model, SMA was predicted by self-monitoring (β = -0.4, p<0.01). On the other hand, self-evaluation and self-reinforcement did not predict the SMA. The regression model accounted for 17% of the variance in SMA.

Tablo 3. *Summary of Stepwise Regression Analysis for Variables Predicting C-TANC*

Dependent/Predicted Variable	Predictive Variable	*B*	*B Standart Error*	*β*	*t*	*p*	*F*	R^2
C-TANC (Coping with Teasing and Name Calling)	Step 1							
	Constant	30.07	3,87		7.76	.000	11.68	.04
	Self-esteem	.41	.12	.20	3.42	.001		
	Step2							
	Constant	25.33	3.93		6.45	.000	15.00	.10
	Self-esteem	.04	.15	.02	.23	.82		
	Children's Hope	.58	.14	.31	4.20	.000		

As seen Table 4, in the regression model, SMA was predicted by self-regulation (β = -0.26, p<0.01). The regression model accounted for 7% of the variance in SMA.

Table 4. *Summary of Simple Linear Regression Analysis for variable of self-regulation total scores predicting SMA total scores*

Variables	*B*	SE_B	*β*	*t*	*p*	*R*	R^2	A_{R^2}
Constant	87.07	6.64		13.12	.000			
Self-regulation	-.17	0.04	-0.26	-4.66	.000	.26	.07	.06

As seen in Table 5, it is found that there was no difference between SMA (t=.70, p=.79) and self-regulation mean scores (t=.69, p=.50) according to gender, while the SMA mean scores ($\bar{X}$=57.44) of non-working students were significantly higher than that of the working students ($\bar{X}$=51.86; t= -2.90, p= .004).

Table 5. *The Means, Standard Deviations and t-values for the differences in terms of gender and working status*

Variables	Gender	*N*	$\bar{X}$	*S*	*t*	*p*
SMA	Female	217	56.71	13.42	.70	.79
	Male	89	55.53	13.44		
	Working	59	51.86	13.64	-2.90	.004
	Non-working	247	57.44	13.16		
Self-regulation (total)	Female	217	179.45	20.02	.69	.50
	Male	89	177.70	20.58		
	Working	59	177.23	20.01	-.72	.47
	Non-working	247	179.35	20.22		
Self-monitoring	Female	217	60.18	11.79	-.84	.40
	Male	89	61.33	10.47		
	Working	59	61.07	11.18	.42	.68
	Non-working	247	60.38	11.49		
Self-evaluation	Female	217	11.16	2.04	-.33	.75
	Male	89	11.25	2.22		
	Working	59	10.83	1.98	-1.46	.15
	Non-working	247	11.27	2.11		
Self-reinforcement	Female	217	108.11	11.86	1.58	.12
	Male	89	105.12	16.196		
	Working	59	105.34	14.43	-1.22	.22
	Non-working	247	107.70	13.02		

DF= 304

4. Conclusion and Discussion

Internet and social media usage is known to be quite common among adolescents and emerging adults (Mazman and Usluel, 2011; Vannucci, Flannery and Ohannessian, 2017), this study, investigating social media usage among the emerging adult population, examined the relationship between SMA and self-regulation processes, self-monitoring, self-evaluation, and self-reinforcement. The relationship between SMA and total self-regulation scores was also examined. Meanwhile, the mean score differences of SMA and self-regulation in terms of gender and working status were also investigated.

The results revealed that there were no mean score differences of SMA in terms of gender. Although some of the literature shows that women tend to develop more addictions than men in the use of social interacting activities (Andreassen, Pallesen and Griffiths, 2017) and women have a higher risk of developing addiction in their smartphone use behaviors (Van Deursenet al., 2015), some other studies report that there is no relationship between SMA and gender (Alkan and Doğan, 2018; Baz, 2018; Demir and Kumcağız, 2019; Yılmazsoy and Kahraman, 2017). As stated in some studies (Savcı, Ercengiz and Aysan, 2018; Tess, 2013), with the increase of smart phones, social media has started to be widely used regardless of social, cultural and economic differences. Indeed, according to the Digital Report (January, 2021), 91.19% of individuals who access to the internet is using social media in Turkey. Although the gender distribution is unknown, it is possible for both genders to use social media at similar rate and intensity to express themselves in the easiest and fastest way and receive social reinforcements. In line with this, generation Z shows their ideas, social identities and instant emotions (Ramadlani and Wibisono, 2017) and express their ideas (Nagy and Kölcsey, 2017; Swanzen, 2018) through social media. In other words, it can be said that, participants of this research, university students, may prefer social media to convey their social identity, instant feelings and ideas regardless of gender differences. The rapid communication of immediate emotions and ideas can be equally important to both genders. For this reason, both genders may use social media at a close intensity and rate. In this context, in order to prevent SMA for all individuals regardless of gender, it may be important to extent the opportunities for showing social identity and immediate emotions as well as sharing ideas. These extended opportunities can be in conventional ways such as university newspapers, graffiti, art, sports and other cultural activities, including all kinds of self-expression tools, where individuals can express themselves. It may also be important to seek and present opportunities for individuals to express themselves in live/real communities and activities like social drama, theatre etc.

In this study, the SMA scores of the non-working university students were found to be higher than the working students. As far as it can be reached, there was no study related to SMA of working individuals in the literature. But it can be said that non-working university students have more opportunities to be in social media. In other words, working individuals' opportunities to engage with social media may be more limited. As a matter of fact, requirements such as keeping up with the job, fulfilling work-related duties and responsibilities, fulfilling non-work responsibilities, fulfilling school and educational responsibilities, and organizing personal, career, and school relationships can increase the motivation of working university students to regulate themselves in order to complete these tasks. In other words, this kind of intensity may lead the individual to regulate themselves in terms of time, work and educational requirements and responsibilities. Such a self-regulation may prevent SMA among working university students. On the other hand, non-working university students may have a luxury of spreading their school and educational responsibilities over a longer period of time due to their more time. This type of luxury may cause less motivation to organize or regulate themselves. For this reason, SMA mean scores of working university students may have been found to be lower than non-working students.

One other reason might be related to meaningfulness, that is if individuals use their time for earning money, doing something for self-enhancement, they may feel that their time is meaningful. In this regard, Çevik et al. (2020) found that there is a negative relationship between smartphone addiction and meaning and purpose in life. This finding implies that if individuals find meaning and purpose in their life, they may not need to attach themselves to social media. In other words, feeling a meaning and purpose in life may prevent people from SMA. Besides, meaningfulness also may help individual to regulate herself/himself as in the case of working individuals. Moreover, self-enhancement activities and responsibilities may lead individual to have more pleasure from such activities that are meaningful for his/her personal development. For this reason, she/he may not need pleasure-seeking behavior from social media. Because individual have a meaning and pleasure from her/his self-enhancing activities and fulfilling her/his responsibilities. Moreover, some volunteer activities may also give meaning and purpose to the individual. In this regard, use of time in meaningful activities, providing appropriate working opportunities, even volunteer activities for the sake of others may prevent individuals from SMA.

In this study, it was determined that general self-regulation scores were a significant and negative predictor of SMA scores. This finding is in line with the positive correlation between poor self-regulation and internet use among university students (LaRose, Linn and Eastin, 2003). In a study investigating how social-cognitive determinants affect social media use, it was found that inadequate self-regulation and social media use of individuals play an important role in the development of habitual strengths that effectively predict social media use (Khang, Han and Ki, 2014). As mentioned in these studies, university students in this study are likely to experience self-regulation deficiencies as in other cultures. For example, self-regulation means controlling over one's thoughts, feelings and actions to achieve a goal (Kanfer and Kanfer, 1991; Zimmerman, 2000). The participants of this study may have difficulties regulating themselves about many subjects such as managing their time, focusing on personal/social and academic responsibilities, doing their emotional regulation (being able to regulate dysfunctional emotions), and maintain impulse control to achieve their responsibilities, instead they use social media with less control over their behavior. It can be said that SMA scores may have increased with the emergence of such self-regulation inadequacies.

In this study, it was also determined that self-monitoring, one of self-regulation processes, was a significant and negative predictor of SMA. This finding is consistent with the literature that mentions errors in self-regulation, incomplete self-regulation, or problems in self-monitoring are related to addictive behaviors (Kanfer, 1970; Miller, 1987; Wilson et al., 1989; Endler and Kocovski, 2000). Individuals who do not observe or monitor their own behaviors may not be aware of their behaviors, as well as not being aware of the effects of their own behavior. In other words, it will be less likely to evaluate the effects of their behavior.

In this study, no relationship was found between self-evaluation and self-reinforcement and SMA. This situation may have arisen due to the possibility of external resources of individual. In other words, the individual may not need self-evaluation and self-reinforcement, because she/he may take into account the evaluation and reinforcement from external sources. External resources like friend, parents, girl/boy-friend can evaluate and reinforce her/him. In other words, collectivist characteristics of Turkish culture may give external feedback with external evaluation and external reinforcement. In this context, Sahranç, Çelik, Turan

(2017) states that because of the collectivist culture of Turkey, social support can be easily supplied not only by friends and the family, but even by neighbors and extended family. In other words, people around individual may give feedback including evaluation and criticism or reinforcement about individual's social media usage. As a result, the person may not need personal "self" evaluation and reinforcement. Even though the person does not evaluate and reinforce herself/himself, she/he get immediate feedback and she/he may need to focus only observe or monitor her/his own behavior. It also may explain why only self-monitoring is enough for self-regulation about social media usage. The individual may say oneself as "I have been on social media for long hours today, my friends (parents/grandparents/neighbors) will criticize me" and it may lead her /him to stay away from social media without the need for in-depth self-evaluation and self-reinforcement. Therefore, his/her responses to the items related to self-evaluation and self-reinforcement may not have turned into a statistically predictive effect. On the other hand, there may be an increasing need for self-monitoring or observing one's own behavior in order to get frequent and rapid responses as stated by Ramadlani and Wibisono, (2017). The person may observe or monitor her/his own behavior in order to get immediate response, how fast and frequent she/he gets response, and next time do the same without self-evaluation and self-reinforcement.

5. Limitations

To mention some limitations of the study, when evaluating the research findings, it should be taken into account that the findings obtained through the study group can only be generalized to similar groups. Therefore, in future studies, it may be beneficial to use more representative samples and more variables in terms of generalizability of the findings. In this context, SMA and self-regulation relationships can be examined in individuals with a wider range of educational levels and various social groups.

6. Recommendations

The relationship between gender and social media usage can be examined in detail. A quantitative research may reveal whether there are any cultural differences in terms of gender. Moreover, via such a research, the types of reinforcements that both genders taken and the meaning and importance that they attach to these reinforcements can be investigated to check whether there are any reinforcement differences according to the gender. Also, as stated by Ramadlani and Wibisono (2017), Nagy and Kölcsey (2017), and Swanzen (2018), sharing ideas, social identities and instant feelings can be understood according to gender as well as reinforcement immediacy. Besides future research may also investigate whether the SMA of individuals who have extended opportunities via conventional ways such as university newspapers, graffiti, art, sports and other cultural activities, including all kinds of self-expression tools change or not. Meanwhile, the effect of self-regulation can be investigated in the relationship between being in these activities and SMA. Also future studies may also investigate the types of reinforcements that both genders take and the importance they attach to these reinforcements can be investigated, so that gender differences about SMA will be clarified. In order to understand the experiences of the individual during the social media usage can be investigated in-depth research via a qualitative research. It may also give opportunity to understand internal evaluations and reinforcements of individual during the social media usage. Individuals who work in a job, serve in voluntary activities and those who do not work and do not serve in voluntary activities can be chosen to find out SMA differences. Besides, the role of self-regulation in the relationship between working, serving in voluntarily, and not working and SMA among these groups can be addressed.

Besides, in regard with the findings of this study, the effectiveness of various self-regulation programs to be developed for individuals to acquire positive habits that will improve themselves for self-enhancement, to do time management better, to develop a kind of capacity to enjoy functional self-enhancing activities, to focus on their personal/social and academic responsibilities, to focus on emotional regulation and to control their impulse about social media usage can be examined. However, how individuals using social media experience within the processes of self-monitoring, self-evaluation and self-reinforcement can be examined with a qualitative research.

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Are the Learning Styles of Elementary School Students Related to Their Academic Success? A Study of Mixed Research Methods

Elif SARİCAN[1]

[1]*Marmara University, Atatürk Education Faculty, İstanbul, Turkey* *0000-0003-0264-3950*

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ABSTRACT

The aim of this study is to point out the relationship between learning styles and the academic. The purpose of this study is to show the relationship between learning styles and academic achievement of 4th grade elementary students. The study was designed according to the convergent parallel design, one of the mixed research designs in which quantitative and qualitative research methods are used together. While the quantitative and qualitative data are collected together in accordance with the convergent parallel design, the data analysis is presented separately in the results section. The study group of the research consists of 163 grade 4 primary school students, 74 girls (n=74) and 89 (n=89) boys, taught in a government primary school in Istanbul Turkey. To find out whether learning styles predict academic achievement, linear regression analysis was conducted. On the other hand, descriptive analysis and content analysis were used in the qualitative data analysis. In this study, it was found that learning styles predict academic achievement. It was also found that students tend to discover their own learning methods, and depending on which method they prefer, the academic area in which they succeed differs.

Keywords:
Learning style, academic success, elementary school, mix research

1. Introduction

The term style is defined as the set of personality traits, activities, and behaviors that an individual embodies and maintains over a period of time. As can be seen from this definition, learning style is an individual difference. In many studies of academic achievement, learning styles are considered as a variable in addition to the many individual differences such as intelligence, age, gender, socioeconomic situation, and motivation. It is expected that finding out how individuals think and how they learn and recognizing the factors that influence them will facilitate the process of effective learning and clear thinking (Gueven & Kueruem, 2008).Therefore, in many researches done about learning styles, academic success plays an important role. Thus, Cevher and Yıldırım Cevher & Yıldırım (2020) have analysed 341 studies about learning styles carried out between 2000 and 2016 in Turkey and they have pointed out that the most applied variable is academic success. According to the results of the analysis, the variables of learning styles and academic success have been applied in 137 researches and it has been concluded that, only in 83 of them, the learning environment prepared considering the learning styles increases academic success. When the literature is reviewed, in studies carried out also in different countries, it can be understood that there is a relationship between learning styles and academic success and learning environments arranged regarding the learning styles increase academic success. (Chen, 2006; Collinson, 2000; Williams, 2010). Collinson (2000) When the learning styles and academic success of 110 primary school students in California were compared, a significant difference was determined. Chen (2006) worked with 390 junior high school students in Taiwan and found out that there was a considerable correlation between their reading grades and learning styles and those learning styles predicted reading grades. Similarly, Williams (2010) also pointed out a significant relationship between learning styles

[1] Corresponding author's address: Marmara University, Atatürk Education Faculty, Turkey
e-mail: esarican@marmara.edu.tr
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and the level of comprehension which is a key point of academic success. On the other hand, Johnson and Illionis (2006) worked with 25 students from 5th grade in Social Studies course and pointed out that the students' academic success increased in that lesson when it was prepared regarding the learning styles of the students.

The researches done about learning styles contains a wide range of ages from primary school to higher education. Bozkurt and Orak (2016) have analysed 100 studies (2000-2013) carried out in Turkey about learning styles only in the field of academic success variable and 44% of those studies took place in higher education while 6% of them was carried out in primary schools. Similarly, Cevher and Yıldırım (2020) found out that 341 studies have been carried out on the maximum bachelor degree level and primary school level minimum. When the effects of basic education on other levels of education are regarded, it is important to consider the learning styles from an early age. Styles can be changed and learned. Thus, when individuals discover and organise their learning styles at an early age can help acquire an important skill in terms of academic success. An important reason why primary school students have been chosen for this study is that, generally, a limited number of researches about academic success and learning styles on the primary school level have been carried out.

In the field of styles no unity has yet been formed. Reviewing the literature, it is found that there are various models of learning styles and many different scales have been developed to measure them. One of these models is based on the very well-known "theory of experiential learning" by Kolb (ELT).Kolb's learning style covers two dimensions: perception and processing. While perception defines concrete thinking, processing defines active and reflective data processes. These dimensions are combined to create a model identifying four types of learning styles. To measure these dimensions defined, Kolb, in 1985, revised Learning Styles Inventory (LSI), which he first developed in 1976, by increasing the reliability and the construct validity of it (Riding & Rayner, 1998, p. 56). On the scale, there are 9 (later 12) self-identification items. Each item asks participants to put 4 words in an order starting from the one that best defines their learning style. Each word, on the other hand, refers to one of 4 learning styles: Concrete experience (simple word, feeling), Reflective Observation (watching), Abstract Conceptualisation (thinking) and Active Experimentation (doing) (Kolb, 1981, p. 290). As a result, the dimension that the individual prefers most determines the individual's learning style (Kelly, 1997, p. 3). The published versions of LSI [Kolb, 1976a; Kolb, Baker, & Gish, 1979; Kolb, Rubin, & Mclntyre, 1979] points out that the scale must be supported with other data and that it is only a starting point for understanding the learning approach (Kolb, 1981, p. 290). This model drew attention especially in the 1970s and contributed to the development of several new learning models. By revising Kolb's Learning Cycle, Honey and Mumford determined four learning styles that refer to each level that Kolb suggested. In Chart, these learning styles and their characteristics can be observed (Honey & Mumford, 2000 qtd. Coffield, et al., 2004, p. 72).

To measure learning styles, whose characteristics are explained in Table 1, the Learning Style Questionnaire (LSQ) developed by Honey and Mumford was used. This questionnaire consists of 80 items. The items of the questionnaire were composed to measure the styles to which individuals are most inclined. Individuals indicate whether they agree or disagree with each item. Specific scores are assigned for the selected items, most of which exhibit behavioral characteristics, and the style appropriate for the individual is determined (Honey & Mumford, 1986, p. 21). The most important feature of the LSQ is that it not only identifies the learning process but also aims to improve it (Mumford, 1987 cited in Coffield, et al., 2004, p. 73).With their studies in Lancaster and Edinburgh university, Entwistle and his friends, who work on education psychology, also developed a conceptual model based on quantitative and qualitative methodology. In this model, the aim is to develop the required attitudes and behaviours for students to develop effective learning approaches and determine them (Coffield, et al., 2004, p. 91).

Style	Strengths	Weaknesses
Activists	● Flexible and open-minded Ready to take action ● Like to be exposed to new situations ● Optimistic about anything new and therefore unlikely to resist change	● Tendency to take the immediately obvious action without thinking through possible consequences ● Often take unnecessary risks ● Tendency to do too much themselves and to hog the limelight ● Rush into action without sufficient preparation ● Get bored with implementation / consolidation / follow through
Reflectors	● Careful ● Thorough and methodical Thoughtful ● Good at listening to others and assimilating information ● Rarely jump to conclusions	● Tendency to hold back from direct participation ● Slow to make up their minds and reach a decision ● Tendency to be too cautious and not take enough risks ● Not assertive; not particularly ● forthcoming and have no 'small talk'
Theorists	● Logical, 'vertical' thinkers Rationale and objective ● Good at asking probing questions Disciplined approach ● Grasp of the 'big picture.'	● Restricted in lateral thinking ● Low tolerance for uncertainty, disorder and ambiguity ● Intolerant of anything subjective or intuitive ● Full of 'shoulds, the oughts and musts'
Pragmatits	● Eager to test things out in practice ● Practical, down to earth, realistic ● Businesslike – get straight to the point ● Technique-oriented	● Tendency to reject anything without an obvious application ● Not very interested in theory or basic principles ● Tendency to seize on the first expedient solution to a problem ● Impatient with indecision ● More task-oriented than people- oriented

Approaches to Studying Inventory (ASI) developed by Entwistle has a few versions. In the beginning, ASI was developed to cover broad subjects identifying learning approaches, learning styles, motivation and study methods (Entwistle & Tait, 1990, p. 171). Dunn and Dunn (1993, p. 2) defines learning styles as a way which shows differences in each individual and as an ongoing process of receiving information and implanting it in the mind. Thus, learning styles reflect the personality traits which adapt each individual better to the teaching methods (Dunn, Denig & Lovelace, 2001, p. 12). The learning styles in the Dunn and Dunn model are related to environmental, emotional, sociological, psychological, and physiological (Dunn, 2003, p. 2). In other words, individuals perceive according to these stimuli and interact with the learning environment (Dunn, 1999, p. 51). These stimuli are related to the elements in learning style. To illustrate, regarding the environmental stimuli, an individual has the tendency of choosing to study either in a loud or noisy place, in bright or dim light, in cold or hot place, in classroom or library or in kitchen or living room (Coffield, et al., p. 22). Dunn ve Dunn (1993) Learning styles are based on those basic principles:

- Most people have the ability to learn.
- Within the learning process, sources and environmental factors can be arranged according to the learning style.
- Every individual has a certain strength. However, not each of them is strong on the same level.
- Every student has different learning preferences within the learning process. These preferences can be measured and evaluated.
- Educators can use their learning styles within the learning process.
- Students can realise their learning styles when they encounter new and difficult information within the learning process.
- Learning environments arranged according to learning styles increase the success of students.

As it is seen, various models and inventories have been developed to explain the learning styles and to measure their fields (Riding & Rayner, 1998). This can be seen clearly in researches. Kolb's model (ELT) and LSI are preferred more than the others (Bozkurt & Orak, 2016; Cevher & Yıldırım, 2020). The fact that the researches have been conducted frequently in higher education is quite normal because LSI is a convenient scale for this age group. On the other hand, when the studies about learning styles and academic success of students at an early age are examined, it can be seen that Dunn & Dunn model is mostly preferred which is more proper for little children (Bozkurt, 2005; Bozkurt & Aydoğdu, 2009; Collinson, 2000; İnal, 2013). In this

research, Marmara Learning Style Scale, which is developed regarding Dunn & Dunn model, has been preferred considering the age group. It aims to explain the relationship between the learning styles and academic success of 4th grade primary school students. The research is limited with the 4th grade primary school students who are educated in a state school.

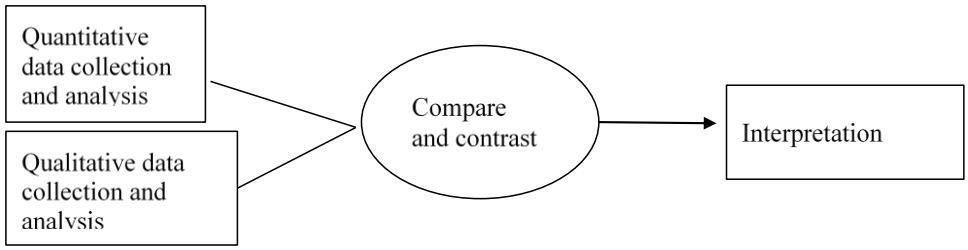
The aim of this study is to determine the relationship between elementary students' learning styles and their academic achievement. In view of this objective, the study sought to answer the following questions: (1) What is the role of learning styles in predicting academic achievement? (2) What is the relationship between students' learning preferences and their academic performance? (3) What are students' opinions about the reasons for their performance? (4) What is the relationship between students' preferred learning strategies and their academic performance?

2. Methodology

2.1. Research Model

In this study, a mixed research method was applied. Mixed methods can be defined as "a lot of different ways to see" (Creswell & Plano-Clark, 2020). The mixed method is a research approach that is used in the field of health, social and behavioral science by the researcher who integrates two data sets where both quantitative (close-ended) and qualitative (open-ended) data are included to understand the research problem and then takes advantage of these sets to find out the results. In other words, the researcher collects data by using both quantitative and qualitative approaches in one study or research program, analyses them, integrates the findings and makes deductions (Tashakkori & Creswell, 2007). The hypothesis of the approach is that it will be more advantageous for the researcher to combine the statistical tendencies (quantitative data) with stories and personal experience (qualitative data), rather than using one of these methods alone, in order to understand the research problem better. Therefore, in this research both quantitative and qualitative approaches are applied.

In this research, four main mixed-method designs are used: the sequential explanatory design, the sequential exploratory design, the embedded design, and the convergent parallel design. However, in this research, only the convergent parallel design is carried out. It consists of the researcher simultaneously applying the quantitative and qualitative phases of the research process.



Figures 1. *Convergent Parallel Design Model (Creswell & Plano-Clark, 2015, 77)*

In the analysis, the phases are separated, but it is checked whether the results confirm each other or not. Thus, equal priority is given to the methods (Creswell & Plano-Clark, 2020). In this research, to collect quantitative data regarding the identification of students' learning styles, "Marmara Learning Style Scale" was used simultaneously with an open-ended questionnaire consisting of 3 questions to collect the quantitative data.

2.2. Research Sample

The participants of the research consist of 163 fourth grade students, 74 girls (n=74) and 89 (n=89) boys, who receive education in a state primary school in Istanbul. The age average of the participants is identified to be 9.97 ($\bar{X}$ = 9,97). In determining this group, the convenience sampling method is applied. In this method, because of the limitations due to some factors (time, work force etc), the sampling is chosen from the reachable and available participants (Fraenkel, Wallen, & Hyun, 2011). In the convenience sampling method, the researcher starts from the participants who can be reached easily and tries to reach the sampling number in the goal (Büyüköztürk et al., 2008). From the same study groups, both quantitative and qualitative data were obtained, but the analysis of the quantitative data was carried out with the data received from 60 students of this sampling group. The reason for it is the sampling was at the point of redundancy. Sample size is determined with the first level of informative assessments about the research and the situations the researcher

encounters during data collection. If the goal is to obtain the maximum amount of data, at the point where no new data is received from the new sample group, in other words, when the point of redundancy is reached, no more sample is included. In other words, the repetition of data is the first criterion. The basic rule for ideal sampling is the repetition cycle that results from the redundancy point. After a certain point, all new samples will contain the data found in the previous parts of the survey. In the case of this repetition, the data collection must be stopped and the sample size must be determined at the point where the repetition is first observed (Morgan & Morgan, 2008; Onwuegbuzie & Collins, 2007; Shenton, 2004 qtd. Baltacı, 2018).

2.3. Data Collection Tools and Procedure

Three data collection tools were applied in the research: Marmara Learning Style Scale, open-ended questionnaire, and personal information form.

Marmara Learning Style Scale: In this research, "Marmara Learning Style Scale", which was developed by Şimşek (2007), was used in order to collect quantitative data. Marmara Learning Style Scale was inspired by the theoretical basis of the learning styles scale developed by Dunn and Dunn. Not all dimensions of Dunn and Dunn's learning styles are included in the scale. The aim of the scale is to measure the learning styles of 3rd, 4th and 5th grade students, which corresponds to the age group between 9 and 11 years old.The scale consists of 4 basic dimensions and 17 sub-dimensions which makes 94 items. The basic dimensions are Environmental (noise, light, heat, sitting position), Emotional (motivation, persistence, responsibility, structuredness), Sociological (social interaction, learning with an adult, learning in different ways), Physiological (auditory perception, visual perception, tactile perception, food, time, activity). The items of the scale are not questions and there is not only one answer to them. Each person to whom the scale is applied chooses the "yes" option if they feel that option best describes them. For the items that do not fit her, the person chooses the "no" option. Half of the number of items in each subdimension shows a preference, while the other half consists of the statements that are opposite to those of the other half. In the calculations of the internal consistency coefficient of the scale, Spearman Spearman-Brown, Guttmann, Cronbach Alpha used the reliability coefficient. Looking at the results of the calculations, it can be seen that Spearman Spearman-Brown, Guttmann and Cronbach Alpha obtained high coefficient values of .53, .67 and .66 respectively. When the coefficient of the whole group is considered in the validity research, the value of Learning Style Scaleis .67. This coefficient value is also called acceptable.

Open-ended Questionnaire: This questionnaire consists of these open-ended questions: (1) How do you learn best? What do you do when you learn something new? (2) What is the lesson that you are most successful? Why? (3) What needs to be done to be successful in lessons?

Personal Information Form: This form includes the sex and academic achievement grades of the students. The academic achievement grades are entered by the class teacher calculating the average grade of each lesson.

2.4. Data Analysis

In the analysis of quantitative data, simple linear regression analysis via SPSS was applied in order to examine if all the sub dimensions of learning styles predict academic achievement. The aim of regression analysis is to determine whether the independent variables affect dependent variables and identify its level of effect. In simple regression analysis, the linear relationship between response variable and one explanatory variable is explained (Weisberg, 2005). In simple linear regression, while Y response variable, XI explanatory variable, $\beta 0$ and $\beta 1$ are identifying the parameters of this variable, i ε is referring to the random error terms (Kutner et al., 2005 qtd. Arı & Onder, 2012):

$$Y = \beta 0 + \beta 1\ X1i + i\ \varepsilon\ i = 1,2,...,n$$

On the other hand, in qualitative data analysis, descriptive and content analysis were applied. In the content analysis, data resembling each other are brought together within the context of specific terms and themes and they are organised and interpreted in a comprehensible way (Yıldırım & Şimşek, 2018). Within the content analysis process, apart from the researcher, another expertise in educational sciences carried out all the codings. By comparing these codings, it was tried providing consistency. Moreover, these codings carried out and the themes created were presented to two lecturers from the Department of Curriculum and Instruction

and the Department of Elementary Teacher Education to examine the consistency of the codings. Regarding the suggestions, the codings were revised. In descriptive analysis, on the other hand, the opinions of the individuals who are interviewed or observed are directly quoted (Yıldırım & Şimşek, 2018). Detailed descriptive method was applied and direct quotations were presented so as to increase the transferability of the research.

3. Findings

As a result of the independent sample t-test, it was found out that academic achievements do not differ significantly according to the sex of the participants. For Turkish grammar (t(161)= 1,204, p>.05), for Maths knowledge (t(161)= ,488, p>.05), for Sciences (t(161)= 1,422, p>.05), and for Social Studies (t (161)= ,668, p>.05), the related t values are not statistically significant. The academic achievement of boys and girls are alike. To examine whether the learning styles of students differ in terms of their sex, independent samples t-test analysis regarding the sub-dimensions of the learning style scale was conducted. According to the results of the analysis, a statistically significant difference for the sub-dimension of "seating position" was found (t(161)= -2,149, p<.05). Male students have more points in the related sub-dimension than the female students. Findings regarding other quantitative and qualitative analysis are stated in the subtitles below.

3.1. Findings related to the role of the learning styles in predicting the academic achievements of the students

The results related to the role of learning styles in academic achievement are presented separately for each lesson.

3.1.1. Regression Analysis Results for Social Studies: Simple linear regression was applied to test whether each sub-dimension of the learning styles scale is a predictor for Social Studies. The results related to the analysis is demonstrated in Table 1.

Table 1. *Values Related to The Regression Analysis of Learning Styles and Achievement in Social Studies*

Social Studies	B	S.H.	β	t	p	R	R^2	F	p
Time Preference	93,711	2,135		43,883	,000	,157	,025	4,080	,045*
	-,969	,480	-,157	-2,020	,045				
Persistence	91,263	1,095		83,378	,000	,156	,024	4,020	,047*
	-1,113	,555	-,156	-2,005	,047				
Auditory learning	96,227	2,760		34,864	,000	,191	,036	6,083	,015*
	-1,034	,419	-,191	-2,466	,015				

*p<0.05, **p<0.01 (N=163; df(1,161)

According to the result, it is observed that time preference F(1,161)=4,080, p<.05; persistence F(1,161)=4,020, p<.05 and auditory learning F(1,161)=6,083, p<.05 styles significantly predict the achievement in Social Studies statistically.

3.1.2. Regression Analysis Results for Sciences: Simple linear regression was applied to test whether each - sub-dimension of the learning styles scale is a predictor for Sciences. The results related to the analysis is demonstrated in Table 2.

Table 2. *Values Related to the Regression Analysis of Learning Styles and Achievement in Science*

Science	B	S.H.	β	t	p	R	R^2	F	p
Time preference	94,582	2,601		36,363	,000	,194	,038	6,300	,013*
	-1,466	,584	-,194	-2,510	,013				
Responsibility	79,403	4,207		18,873	,000	,172	,029	4,888	,028*
	2,616	1,183	,172	2,211	,028				
Persistence	90,701	1,337		67,839	,000	,178	,032	5,295	,023*
	-1,560	,678	-,178	-2,301	,023				

*p<0.05, **p<0.01 (N=163;df(1,161)

According to the result of the analysis, the styles time preference F(1,161)=6.300, p .05; responsibility F(1,161)=4.888, p .05 and reliability F(1,161)=5.295, p .05 statistically significantly predict performance in science.

3.1.3. Regression Analysis Results for Mathematics: Simple linear regression was applied to test whether each -sub-dimension of the learning styles scale is a predictor for Mathematics. The results related to the analysis is demonstrated in Table 3.

Table 3. *Values Related to the Regression Analysis of Learning Styles and Achievement in Mathematics*

Maths	B	S.H.	β	t	p	R	R^2	F	p
Time preference	92,141	3,477		26,498	,000	,208	,043	7,308	,008**
	-2,112	,781	-,208	-2,703	,008				
Auditory Learning	93,887	4,542		20,672	,000	,187[a]	,035	5,814	,017*
	-1,664	,690	-,187	-2,411	,017				

*p<0.05, **p<0.01 (N=163;df(1,161)

According to the analysis result, the styles of time preference F(1,161)= 7,308, p<.01; Auditory Learning F(1,161)=5,814, p<.05 styles are statistically significant predictors for Math achievement.

3.1.4. Regression Analysis Results for Turkish: Simple linear regression was applied to examine whether eachsub-dimension of learning styles scale is a predictor for Turkish Lesson. The results related to the analysis are demonstrated in Table 4.

Table 4. *Values Related to the Regression Analysis of Learning styles and Achievement in Turkish*

Turkish	B	S.H.	β	t	p	R	R^2	F	p
Stable	90,215	2,676		33,711	,000	,166	,027	4,536	,035*
Time Preference	-1,280	,601	-,166	-2,130	,035				

*p<0.05, **p<0.01 (N=163;df(1,161)

According to the result of the analysis, time preference F(1,161)= 4,536, p<.05 style is a statistically significant predictor of Turkish achievement. Time preference sub-dimension is observed to be the predictor of academic achievement for all lessons.

3.2. Findings Related to the Qualitative Data

Findings related to the qualitative data are stated below.

3.2.1 Results related to the relationship between learning style and academic performance: The table below shows the answers to the following questions: "How do you learn best? What do you do when you learn new things?" and the lessons particularly well achieved by the students who answered these questions are included.

Table 5. *Differentiation of Academic Achievement in Regard to Learning Preference*

Theme	Category	Code	*f*	Academic Achievement
Learning Preference	Cognitive preference	by listening	18	Science, Social Studies
		by observing	4	Mathematics
	Learning Strategy	by reading	11	Turkish
		by revising	6	Mathematics
		by explaining	5	Science
		by researching	4	Science
		by writing	3	Turkish, Social Studies
	Setting Preference	quiet place	15	Science, Social Studies
		other (with music, by travelling)	6	Turkish, Social Studies
		by playing games	2	Mathematics, Social Studies
	Studying Preference	by asking others (family, teacher, friend)	7	Social Studies, Science
		by studying alone	5	Science

As it can be observed in Table 5, choosing a quiet place and studying with auditory learning is observed as the most repeated two learning style preferences. The lessons in which students are more successful than in others differentiate under the title of the category. When the academic achievement grades of the students who state their preferences are taken into consideration, it was observed that they are more successful in Science and Social Studies. While the achievement in Turkish stands out with learning by reading, revision

and observation highlight the achievement in Mathematics. The fact that the students who generally prefer studying in a quiet place also learn by listening is among the findings. Some sample responses of the students are stated below.

- *"I learn best by listening. I listen carefully while learning new things."*
- *"I learn best in peace and quiet places. I listen carefully as I am learning new things."*
- *"I learn best in a place which is quiet and has bright light. I listen carefully to the person who teaches."*

As observed from the samples, "listening" is stated by the students as the best way to learn. According to the results obtained, the students' academic achievement varies regarding the learning methods they prefer. One of the results of the quantitative data is that the auditory learning method significantly predicts the achievement in social studies in terms of statistics. The qualitative results that are obtained support this result.

3.2.2. Findings Related to the Opinions of the Students About the Reasons of Achievement: In the table below, the students' answer to the question "What is the lesson that you are most successful? Why?" can be observed.

Table 6. *Reasons of Academic Achievements*

The course achieved	Frequency	Sample Statement
Maths	25	S12. Maths because I value it. S13. I understand the topic better. S14. I have a distinct interest in this lesson. S15. I love it. S16. It is fun and it helps us with brainstorming. S17. Because I study this lesson most at home and the teacher loves this lesson most. S18. Maths because I get 100 from all of its exams and I feel happy when I start studying maths.
Sciences	19	S6. Because I love it. It is full of science and fun. S7. We do experiments and obtain information about the planet on which we live in. S8. We do experiments and we keep what we learn in mind. S9. Science catches my attention. S10. I love science lessons. S11.Science because it is very easy.
Social Studies	12	S1: Social studies because I learn a lot from it. S2. Social studies is great. S3. Because I know the subjects well. S4. Social studies is the lesson that I love most.
Turkish	3	S1. I can read and understand very well. S2. I love studying it.
Other (Human Rights Citizenship and Democracy, Religion, Traffic Safety, Visual Arts, Physical Education, English)	15	S19. Religion because I am successful in this lesson S20. Traffic Safety because I can learn easily S24. Visual Arts because everybody loves my paintings, I get 100 and it is fun. S.25. Physical Education because I am good at sports. S.26. Physical Education because I am good at playing football.. S26. Because I am interested in English. I want to go abroad and talk to foreigners. In short, I am interested in English lessons.

As it is seen in Table 6, mathematics is the most frequently repeated lesson among the "most successful" courses. Science and Social Studies follow it. Students explained that the reasons for their achievements are their interest and love towards the lesson. Moreover, they stated that it is easy to learn in these lessons. Some sample answers can be seen below.

- *"Turkish because it is the lesson that I have fun most."*
- *"English because I am interested in English lessons. I want to go abroad and speak English. In short, I am interested in English."*

- *"Mathematics because I get 100 from all of its exams and I feel happy when I start studying mathematics."*
- *"Painting class because I love drawing. I practice painting and drawing in my free time so that I don't get bored."*
- *"Mathematics because I like arithmetics and solving problems."*
- *"It's religion because I learn it gladly."*

Considering the answers given by the students, apart from learning styles or preferences, it can be observed that the attitude towards the lesson affects academic achievement. The results can be interpreted as students deciding on learning preferences and establishing a studying strategy only after developing a positive attitude towards the lesson.

3.2.3. Findings Related to the Relationship Between Learning Strategies and Academic Achievement: The table below demonstrates the students' answers to the question "What needs to be done to be successful?"

Table 7. *The Strategies That the Students Use in Order to be Successful*

Theme	Categories	f	Most Achieved Lessons
Learning Strategy Preference	Doing homework/revision	44	Turkish/Social studies/Maths/Sciences
	Following the lesson/listening	22	Social studies/Sciences
	Other (Reading/Writing/Finding a solution)	5	Maths/Sciences

Table 7 demonstrates students' opinions about the strategies that must be used to be successful. The strategy which is repeated most is "doing homework/revision". This item is stated by the students who are successful in both quantitative and verbal lessons. Therefore, regardless of academic field, "doing homework/revision" can be seen as a significant strategy affecting achievement. "Following the lesson/listening" is also a strategy preferred by both quantitative and verbal lessons for academic achievement. In Table 5, the listening strategy is the most repeated item among the answers given to the questions "How do you learn best? What do you do while learning new things?". This leads to the consideration that there is a relationship between "listening" in particular and academic achievement in Social Studies and science. The common features of these lessons are that they are both interdisciplinary. Social Studies appears as an integration of the fields (history, geography, philosophy, etc.) associated with the social sciences. Science, on the other hand, is the integration of physics, chemistry, and biology. Since the structure of the class relates to more than one area, students might find it complicated. Therefore, students might feel the need to listen to a guide who explains the topics in a factual manner.The sample answers related to the strategies that the students apply to be successful can be observed below.

- *"I think we need to revise the subjects of the lessons and we need to take tests about them."*
- *"It requires lots of practice. Everybody must use the technique they find easy to apply frequently."*
- *"I try to pay attention to the new information during the lesson and use it to find a new way and solutions."*

As observed in samples, the students tend to find the best way to learn and study in that way. "Listening" appears to be the way that the students apply most to be successful.

4. Conclusions and Discussion

Learning Styles are individual based manners. In fact, rather than being the sole way to academic achievement, it is a way which is preferred for academic achievement (Esmer, 2013). The styles defined as the individual differences that affect performance (Zhang, 2000) are considered to have a positive effect on the academic achievement as long as the differences are taken into consideration in the learning environments. Hence, a significant number of researches that support this opinion have been conducted. Those researches have demonstrated that when students learn with their learning styles proper for their learning process, their academic achievements increase (Altun & Serin, 2019; Berberoğlu & Demircioğlu, 2000; Burke & Dunn, 1998; Chen, 2019; Demirbaş, 2001; Li, Yin, Zhang, & David, 2019; Peker, 2005). In Turkey, studies generally prove that styles are one of the individual differences that affect academic performance, and the studies that investigate the relationship between them indicate that the academic field is related to style preferences (Arslan & Babadoğan, 2005; Bilgin ve Durmuş, 2003; Erbey, 2013; Ersoy, 2003; Gueven, 2004; Kanadlı, 2016; Kaya 2007; Kılıç, 2002; Koçak, 2007; Kurnaz & Erguen, 2019; Usta et al., 2011).With different learning styles

scales, it is possible to increase the number of these studies carried out in various grades of schools. The common point of these studies is the findings claiming that style preferences have a significant role in academic achievement. In this research also it is observed that, within some sub dimensions, the learning styles are the predictors of academic achievement.

According to the research results, time preference is observed to identify that persistence and learning styles significantly predicted the achievement in Social Studies course. Yurtseven (2010) analysed the relationship between the learning styles of 5th-grade primary school students and their academic success in Social Studies courses. In this study which includes a sampling group of 370 from 5th-grade primary school, Kolb's Learning Style Inventory has been applied for data collection. Moreover, to identify the students' success, their grades in the school reports have been taken into consideration. As a result of the analysis of the data collected, there has been found a significant difference between the students' Social Studies course and their learning styles. The success of the students who have the convergent learning style have been observed to be more successful in Social Studies course than other students who have different learning styles. Individuals who have the convergent learning style are the ones dominated by abstract conceptualization and active experimentation. In a study by Toğrul (2014), which aimed to investigate the relationship between the learning styles of 5th grade elementary students and their academic achievement in Turkish, mathematics, science and technology, and Social Studies using Marmara Learning Style Scale, it was found that 55.8% of the students who scored 5 in the course Social Studies preferred auditory learning, while 30% of them chose visual learning and 13.4% opted for the kinesthetic learning style.It is also possible to see similar results in the researches conducted with different scales identifying the perceptual learning style. Another study was carried out by Bengiç, Şahin & Gümüşçü (2011) who worked with 1120 students to point out the relationship between the learning styles of 6th and 7th-grade primary students and the success of those styles in Social Studies course. One of the results obtained in this research is that the students who choose the auditory learning style have the highest achievements in the Social Studies course.

On the other hand, in another study by Gueven (2008), based on the results of the test to determine the relationship between the school reports of the course Social Studies, it was pointed out that the students who had a high score on the visual learning style had the most points for the corresponding course in their school reports, while the students who had the highest score on the auditory and sensorimotor learning styles lagged behind them.This finding does not overlap with the results of the research. Sternberg (Sternberg, 1997 qtd. Fer, 2005, 464) emphasized that the styles can be "learnt and developed". In this case, the teaching style of the teacher can affect the learning style of the students, which means there is a relationship between the teaching styles of the teacher and the academic success of the students (Grasha & Yangarber-Hicks, 2000)

In this research, "Listening" is the most repeated answer for the question read "What needs to be done to be successful?". There might be two reasons for this: (1) The students really have auditory learning style. (2) The students learnt and embraced the idea from their teachers that listening is essential to be successful since the styles can be learnt and improved (Sternberg, 1997 qtd. Fer, 2005). In other words, if the teacher uses mostly visual activities in the Social Studies course, the visual learning style of the students can be improved more. The results obtained from this research show a relationship between Social Studies course and auditory learning and learning by listening, which affects academic success.

One of the research results is time preference; responsibility and persistence styles statistically predict the success in science courses at a significantly lower level. Toğrul (2014) pointed out that students who have high grades in science courses prefer not to have a snack but choose low light, warm room and auditory learning style while studying. However, the qualitative findings of this research show that the students who are successful in science course generally prefer learning by listening, explaining, and researching. Moreover, the students attribute their success in science course to the experiments they do, research they do about the earth and learning with fun. It can be suggested that the more the students who choose learning by listening become successful in science courses, the more they prefer active participation in the lesson. Also, in the Social Studies course, the students who learn by listening form a successful group. However, the students do not use the same statements for the Social Studies course as those for science courses that support active learning, such as attending a lesson or doing research. Students can prefer different learning styles for different lessons. It can be observed in the researches which have been carried out that when the learning environment is arranged considering those differences, the academic success increases. As a result of the data analysis obtained in their

study, Usta, Bodur, Yağız & Sünbül (2011) suggested that teaching activities based on learning styles in science course increase the level of academic success. In a research done by Bozkurt (2005), science course for 6th grade primary education is arranged regarding Dunn & Dunn learning style of students and its effect on the students' academic success. Their attitudes and scientific process skills are examined. As a result of the research, statistically significant relationships are identified between Dunn & Dunn learning model and students' academic success, attitudes and scientific process skills. The study by Cano-Garcia & Hughes (2000), who worked with 210 college students, demonstrates the same results as the learning style-based teaching research carried out by Burke & Dunn (2000), who worked with 2nd, 3rd and 4th grade primary school students. Those sample researches suggest that it is quite important to consider the learning styles of learners for academic success.

When the research results regarding Turkish lesson are examined, time preference is considered to predict the success in Turkish lessons significantly at a low level.

In the studies regarding the relationship between reading comprehension and learning styles, it has been emphasized that there are significant relationships between learning styles and reading comprehension (Chen, 2006; Williams, 2010). In this study, learning styles are not strong predictors for academic success in Turkish lessons. However, in one study carried out by applying a different learning style scale (Perceptual Learning Style Scale), the learning styles of 4th and 5th grades elementary school students were examined and as a result of the study, it was found out that when the average point of Turkish lesson and learning style sub-dimensions were compared, the average point of those whose points are 5 is higher than the ones whose auditory and kinesthetic points are 1, 2, 3 and 4 while it is much higher than the ones whose points in visual dimension are 1, 2 and 3 and whose points in kinesthetic dimension are 1 and 2. The average point of those whose grade is 4 is higher than those whose points in visual dimension are 1, 2 and 3, whose points in kinesthetic dimension is only 1 and those whose auditory dimension is 1.

It was found that reading literacy related to Turkish language teaching could be increased when the learning environment was designed according to learning styles, as in Science Lessons. Oezdemir (2013), in his research investigating the effects of learning styles on the correction of errors in audible reading and the development of comprehension skills of 4th and 5th grade elementary students through the use of Marmara Learning Style Scale, found that the reading and comprehension activities prepared for students considering learning styles were effective in preventing dyslexia in elementary students. Within the qualitative dimension of this research, the students who were successful in Turkish lessons stated that they were doing "lots of reading". Turkish lesson took place among the lessons in which the students who preferred homework and revision became the most successful.

In the studies conducted, it can be observed that there is a relationship between learning styles and mathematics. In a study conducted by Yazıcı (2004), the relationship between 5th grade elementary students' achievement in mathematics and learning styles was analysed. This research, using Kolb Learning Style Inventory, revealed the significant difference between 5th grade elementary students' achievement in mathematics and their learning styles. In another research, Utanır (2008) analysed the relationship between the learning styles of 5th grade elementary students and their academic achievement in mathematics as well as their attitude towards teaching. This research, which involved 750 5th grade students and applied Marmara Learning Style Scale, revealed a significant difference between students' learning styles and their academic achievement in mathematics. Another result of the research is that the students who had visual learning style were more successful in Mathematics than the ones who were not visual learners. The fact that visual learners are more successful in Mathematics than non-visual learners is also a result that has been reached in other studies (Özkan, 2013; Poyraz, et al., 2012; Utanır, 2008). In this research, on the other hand, auditory learning style has been observed to be a significant predictor in Mathematics. The qualitative results of the research shows that those who are doing well in Mathematics prefer visual learning style.

Moreover, the students attribute their success in Mathematics to their love for it, which focuses on the relationships between the success in the lesson and the attitude towards the lesson. Revision is also a learning strategy that students who are successful in Mathematics prefer.

The quantitative data obtained in this study does not prove that learning styles cannot predict academic success. However, as a result of the qualitative analysis in this study, it is an important finding that students

are aware of their own learning preferences. Since there is no style dimension that perfectly defines the way of learning, the fact that individuals tend to discover the way they learn best can be considered as a good step for qualified learning. The scales used in the literature could be considered inadequate by teachers and researchers when it comes to identifying students' learning styles. However, the fact that the student can describe the best way of learning allows the classroom applications to be designed according to the learning styles. In the study, when asked about the reasons for students' academic performance, it was found that it was due to their attitude towards teaching. Enjoyment of teaching and willingness to engage in it were cited as reasons for academic achievement. In this sense, one has to wonder to what extent the activities corresponding to learning styles will work for a student who does not show interest in class.

5. Recommendations

In the studies conducted on learning styles, it is observed that qualitative and mixed research designs were preferred in lesser numbers than quantitative research. It is recommended that researchers focus on qualitative and mixed research designs in their studies to thoroughly explore the relationship between learning styles and academic success. Considering the variety of measurement scales used in the field, it is expected that qualitative research will significantly support quantitative findings. Learning styles are personal differences that affect academic achievement.The number of studies conducted on the learning styles of students, especially elementary students, should be increased to address learning environments. In future studies to be conducted in this area, it is recommended to use different scales that measure similar styles in the same group and to investigate the relationship between the scales in terms of reliability of the results.The answer to the question "What kind of people do we want to educate?" determines the goals of educational programs. Today, the answer to this question is generally to become an individual whose higher thinking skills are developed and who can produce knowledge. It is expected that learning environments aimed at growing people with these qualities must be designed with personal differences in mind. Only in this way is it possible to provide equal learning opportunities for every learner. Therefore, primary school teachers must take into account the fact that there may be differences in the learning styles of pupils. If these differences are not taken into consideration, it may have a negative impact on the academic success of the students. Therefore, teachers are advised to be aware of their students' learning styles and prepare appropriate activities.

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The Effect of Fathers' Meet-up Training on the Perception of Fatherhood Role of Fathers with Preschool Children

Gülşah TURA[1], Osman KANAT[2]

[1]*Faculty of Education, Kocaeli, Kocaeli University, Turkey* *0000-0002-0611-7993*

[2]*Afyonkarahisar National Education Directorate, Afyonkarahisar, Turkey* *0000-0002-9323-7095*

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ABSTRACT

This study examined the effect of fathers' perceptions of fatherhood through online meetings with fathers who have preschool children between 3-6 years of age. A total of 42 fathers (21 fathers in the experimental group and 21 fathers in the control group) took part in the study. The research design with a pretest and posttest control group was used in the research. The "Fatherhood Role Perception Scale" developed by Kuzucu (1999) was used for data collection. Within the scope of the research, online fathers meet-up training was held for the experimental group once a week throughout 11 weeks. The data were analysed using the Mann Whitney U and Wilcoxon Signed Ranks Test (nonparametric tests). According to the data obtained in the research, it was concluded that the online fathers' meet-up training was significantly effective on fathers' perceptions of the fatherhood role. The study's findings were discussed, and suggestions were listed for future studies in the relevant literature.

Keywords:
Fathers' meet-up training, online education, fatherhood role perception, preschool

1. Introduction

Family is a social system consisting of adult parents and children where parents responsible for the care of children share emotional, social, and economic responsibilities, and members can feel belonging (Hetherington, Parke, Guavin & Locke, 2006). In terms of children, the family is the only institution where multi-directional development occurs (Güler Yıldız, 2020). Especially in the early childhood period, the most important people around the child are their mothers and fathers. According to Bronfenbrenner's ecological systems theory, the microsystem layer in which the child is at the centre consists of individuals who directly interact with the child, such as the mother, father, teachers, and friends. Stating that the microsystem has the most impact on the child's life, Bronfenbrenner points out that mothers and fathers are the people who have a relatively greater influence on the development of the child. However, he also mentions the effect of other systems (Bronfrenbrenner, 2001). The healthy steps were taken by parents who meet almost all the developmental needs of the individual, who is a biopsychosocial entity, in the early childhood period positively affect many aspects of the child's life.

The multidimensional development of the children begins with the family in which they were born. The family plays a vital role in the child's developmental areas, such as physical, cognitive, language, and moral development (Chiu & Chow, 2015). It is important to develop the knowledge and skills of parents, who have important effects on the child's life, on issues such as parenting, child care, and child education. (Tezel Şahin & Özbey, 2007). In addition, with rapid and great developments in today's world, the family structure has also changed. Some differentiations have been inevitable in the roles and duties assigned to the parents. Scientific

[1]Corresponding author's address: Kocaeli University, Faculty of Education, Kocaeli, Turkey
e-mail: gulsah.tura@kocaeli.edu.tr
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and technological developments have made the role of parents in children's lives more evident. Therefore, various family education programs are implemented for various age groups and families with different characteristics worldwide and in our country (Cheng, 2004; Gunderson, 2004; Kaymak Özmen, 2013; Magill-Evans et al., 2007; Östberg, 2005; Özel & Zelyurt, 2016).

While emphasising the importance of parents in the preschool child's life, the mother-child relationship was generally mentioned, and studies mostly focused on this relationship (Driscoll & Pianta, 2011; Konchaska et al., 2005; Saygı, 2011; Topçu Bilir & Sop, 2016). In studies investigating the role sharing of parents in the care of their children, it was observed that mothers were generally more interested in caring for their children. At the same time, fathers took on responsibilities such as meeting the family's financial needs and protecting the family, resulting in them spending less time with their children than their mothers (Hossain et al., 2007). However, the strong and warm father-child relationship established at an early age positively affects children's social behaviour and decreases the possibility of having behavioural problems (Gültekin Akduman & Türkoğlu, 2015; Webster et al., 2013). It is stated that children with a strong father-child relationship have better friendship relations, their leadership skills are more developed, and their self-esteem becomes stronger (Bloom, 1997).

The healthy father-child relationship established since the child's infancy has an important place in the healthy development of the child (Çağdaş & Seçer, 2005; Tatlı & Aksoy, 2019). Especially in the early childhood period, the father is at least as vital as the mother. How much and how the father is involved in the child's life and his relationship with his child is related to the father's perception of fatherhood (Gültekin Akduman & Türkoğlu, 2015). The paternal role refers to how the father assumes this role as a parent; social expectations and the meaning given to this role also influence their perception (Rustia & Abbott, 1990). Fatherhood, which is affected by individual and social perception, affects how individuals understand this role and their behaviour. Modern fatherhood behaviours that meet our age requirements include effective communication with the child and active participation in the child's development with the mother (Harris & Morgan, 1991). It is known that the healthy bonds that the father will build with the child at an early age are effective in the child's cognitive, social, emotional, and personality development (Forehand, Wierson, Thomas & Armistead, 1990).

Many factors affect the paternal role. According to Kuzucu (2011), fathers' perceptions of fatherhood, gender role attitude, masculinity, psychological status, educational status, income status, occupation, number of children, family type, and whether they want to be a father are affected by the roles that the culture imposes on the father. A study conducted with fathers with preschool children concluded that the perception of fatherhood was affected by fathers' education, employment status, occupation, number of children, age at first fatherhood, and obtaining information about fatherhood (Telli ve Özkan, 2016). How a man perceives himself as a father and how close he feels to this role directly affects his involvement in childcare and his relationship with the child (Doherty et al., 1998; Levy Shiff & Israelashvilli, 1988). Aksoy and Tatlı (2019) examined fathers' relationships with their preschool children and their perceptions of fatherhood. There was a significant relationship between fathers' perceptions of the paternal role and the positive father-child relationship.

Especially in early childhood, the most important people in a child's life are undoubtedly their parents. The parents' knowledge deficiencies about the child's various developmental areas create difficulties in understanding their children and adapting to their development (Şalcı, 2020; Wright, Stegelin & Harfle, 2007). With modernisation and the more involvement of women in business life, there are observable changes in family structures. Thus, the equal responsibility of men and women in the child's upbringing has necessarily changed the fatherhood role. This change has created the need to take all responsibility away from the mother and share it equally. For these reasons, it is important to plan family education activities for mothers and fathers, and they should especially be carried out according to the fathers' different needs (Tezel Şahin & Özbey, 2007). Kakaliçoğlu (2019) investigated fatherhood experiences in the context of changing social roles in modern society and concluded that fathers need parenting education. It was stated that fathers especially needed parenting education regarding child development, childcare, and changing fatherhood roles.

Fathers' meet-up training is adapted by the Mother-Child Education Foundation (AÇEV) to implement the father support program online. This training, which can be carried out by the practitioners of the father education program, consists of online training held once a week throughout 11 weeks. Materials prepared by AÇEV for use in online education are delivered to participants. In parallel with the achievements in the father's

education program, Fathers' Meet-up Training includes goals such as realising the importance of the father's role in the child's development, being informed about the child's development stages, actively participating in the care of the children, and having realistic expectations regarding the development of the child.

In the light of all this information, the answer of "Does online fathers' meet-up training for fathers with children aged 3-6 affect fathers' perceptions about the fatherhood role?" question was investigated. As a result of this study, it is expected that the perceptions of the fatherhood role of fathers participating in the fathers' meet-up training will increase. The hypotheses of the research are listed as follows:

1) Fathers' perceptions about fatherhood and posttest score distributions of fathers who received Online Fathers' Meet-up Training are significantly higher than fathers who did not receive this education.

2) Fathers' perceptions about their role and posttest score distributions of fathers who received Fathers' Meet-up Training are higher than pretest score distributions.

2. Methodology

2.1.Research Model

This study used a quantitative research method to examine the effect of Online Father's Meet-up Training, developed by AÇEV, on the perception of the fatherhood role. Moreover, quasi-experimental methods (pretest-posttest and follow-up test) were used in the control group research design. The participants were grouped into two by random sampling (experimental and control groups). Random sampling was used on two groups by matching them in terms of demographic characteristics from the sample pool (Büyüköztürk et al., 2020). In this design, the causes of some events or the relationships between some situations are examined. The main purpose is to reveal the causality and test the cause-effect relationships of the change on the independent and dependent variables. The internal validity of these studies is also strong (Büyüköztürk et al., 2020; Hocaoğlu & Akkaş Baysal, 2019). The pretest scores of the dependent variable at the beginning of the experiment were measured for the experimental and control groups in the pretest-posttest and the follow-up test control group design. Then, the independent variable is only applied to the experimental group. As a result of the experimental process, posttest measurements of the dependent variable are made for both groups, and by comparing the groups, it is decided whether the experimental process is effective. Te follow-up measurement is applied to the experimental group to see the effectiveness of the process (Büyüköztürk, 2001).

2.2. Experimental grup

The participants were determined using convenience sampling (a non-random sampling method). This study considered the voluntariness of the fathers, and the sampling process was ensured to be continued until completed, starting from the schools that could be reached easily (Büyüköztürk et al., 2020; Creswell, 2012). The research study group consists of 42 fathers who have children attending different kindergartens of Afyon Kocatepe Primary School located in the centre of Afyonkarahisar. 150 voluntary fathers who live in the central district of Afyonkarahisar, having children between the ages of 3-6, and continuing their education in schools where fathers' meetings were introduced, were included in the sample. 42 fathers among the voluntary fathers available to participate in each meeting were selected as the sample since the training required voluntary participation aimed at adults. These fathers, selected for various demographic characteristics, were matched in pairs and randomly assigned to the groups (21 fathers in experimental and 21 in the control group). Roscoe (1975) stated that a small sample group of 10-20 could produce a successful result in well-structured experimental studies (Cited in Büyüköztürk et al., 2020).

There were 6 middle school, 7 high school, and 8 university graduate fathers in the experimental group. 5 of the fathers in the control group graduated from secondary school, 8 graduated from high school, and 8 graduated from university. All 42 participants are employed. While 4 of the participants in the experimental group were civil servants and 17 of them were private-sector employees; 3 of the fathers in the control group were civil servants, and 18 of them were private-sector employees. 3 of the fathers in the experimental group had one child, 10 had two children, and 8 had three children or more. In the control group, 4 had one child, 11 had two children, and 6 had three children or more. The mean age of the fathers in the experimental group was 37.

2.3. Data Collection Tools and Procedure

Fatherhood Role Perception Scale (FRPS): The Fatherhood Perception Scale was developed by Kuzucu (1999) to measure fathers' perceptions of fatherhood. The scale, consisting of 5-point Likert-type and 25 items, can be applied individually and in groups. Positive items on the scale are scored from 1 to 5, and negative items from 5 to 1. A high score on the scale means positive paternal role perceptions, and a low score means negative paternal role perceptions. The scale reliability was checked with the test-retest method, found at the r= 0.60 ($p<.05$) level, and there was a significant relationship. As a reliability study, the scale's internal consistency was also checked, and the Cronbach Alpha Coefficient was calculated as .75 (Kuzucu, 1999).

Content of Fathers' Meet-up Training: Fathers' meet-up training is an 11-week online training program for fathers with children aged 3-6, one day a week, each session lasting two hours (açev, 2020). açev created the program contents and the training process of this research by adapting the father support program to the online application. this online application was preferred during the covid-19 epidemic when face-to-face training was limited. açev prepared educational contents, mother, father, children's activities, various play equipment, and storybooks and sent them to the addresses of fathers who will participate in the training. these materials were also actively used in the training process.

The topics in Table 2 below were included in the father's meet-up training throughout 11 weeks. The homework assignments agreed with the fathers following the week's topic were used throughout the education process. Additionally, homework sharing was before sessions, and evaluation activities related to the session were carried out at the end. In the first session, a meeting event was held with the fathers who participated in the training. After the meeting was over, the fathers' expectations regarding the training to be carried out were discussed. Expectations that could be realised were clarified, and explanations were made on unrealisable expectations. Furthermore, information about the training process and sessions was given. Group rules were created with the fathers who attended the training so the education could proceed healthily during the continuation of the session. Their parenting experiences during the pandemic period were discussed, and the problems experienced were shared. The first session ended by sharing thoughts and feelings based on the session. The second session focused on the importance of the father for the child. A group discussion was held on the importance of the methods used in raising children. The difficult and the favourable aspects of being a father were discussed with a brainstorm. The session was evaluated by mentioning the importance of the father in the child's life and the importance of child-rearing methods. The second session ended with homework. In the third session, children's rights issues were discussed with the fathers through group discussions and question-answers. The important topics regarding children's rights were shared. Negligence and abusive behaviours were discussed and exemplified. The topics of family attitudes were shared. The relationship between family attitudes and children's rights was established. The characteristics of the democratic attitude in the context of children's rights were explained. Providing a discussion environment about family attitudes aimed to raise awareness about attitudes. The session was concluded with an evaluation activity. In the fourth session, the subjects of communication styles such as active listening, communication barriers, and self-expression skills were presented with the help of a question-answer session, case study, and group discussion methods. In the fifth session, the democratic relationship and empathy issue started with the warm-up activity. Empathy, violence and its effects, and anger control issues were discussed using the methods of discussion, question and answer, brainstorming, and in the light of scientific knowledge, incomplete and erroneous information on the subject was emphasised. In the sixth session, developing positive behaviours (e.g. setting an example, setting limits and rules, giving feedback) and issues of reducing negative behaviours (finding the reason, offering options, etc.) were discussed through interactive and case study methods suitable for group interactions. In the seventh session, under the social and emotional development title, socialisation processes, supporting social development, supporting emotional development, social rules, and internal control were explained using discussion, brainstorming, and question-answer methods. The eighth session started with a warm-up activity. Physical and sexual development issues were explained using various methods. In physical development, gross motor and fine motor activities were applied to the whole group with sample movements. A group discussion was held on activities that can support motor skills. By giving information about the sexual development process, approaches that could support sexual development were emphasised. The subject of how to answer questions about sexuality was explained, and sexual abuse was mentioned. A discussion environment was created on the subject, and

scientific information was presented afterwards. In the ninth session, activities such as mental development, supporting mental development, reading, games, and stories/fairy tales and the effects of new experiences on mental development were explained using the group discussion and case study methods. During the rest of the session, the meaning of success and what it means to be successful were discussed. The subjective aspect of success and the importance of success in different fields were mentioned. In the tenth session spending time with the child and play were explained through various methods. The importance of spending quality time was explained with the help of the brainstorming method. The importance of play in the child's life and the issues to be considered in choosing toys were discussed with group discussion and question-answer methods. In the following part of the session, the issue of technology use was mentioned. The session was ended by providing information about safe technology use and allowing fathers to express their thoughts on this issue. In the eleventh session, it was ensured that the participant fathers and the educator shared their feelings and thoughts about the education process. A PowerPoint slide was presented with photographs of the activities during the education. Finally, the training process was terminated by informing the participating fathers about continuing communication and interaction voluntarily.

Table 1. *Weekly Topics of Fathers' Meet-up Training*

Weeks	Contents	Weeks	Contents
1st	Meeting/Expectations/Rules	6th	Positive Attitudes
2nd	The Role of the Father in Child's Life	7th	Social and Emotional Development
3rd	Family Attitudes	8th	Physical and Sexual Development
4th	Discussion and Question-Answer	9th	Cognitive Development
5th	Democratic Relationship and Empathy	10th	Spending Time with Children and Games
		11th	Final Meet-up

2.4. Experimental Process and Data Collection Process

Fathers' Meet-up Training, prepared by the Mother-Child Education Foundation (AÇEV), was carried out with fathers who volunteered to participate in the training and had children attending preschool institutions affiliated with the Afyonkarahisar province. Since face-to-face education was subject to various restrictions during the pandemic, Fathers' Meet-up Training was held online for 11 weeks. The introductory meeting invitations of the education were sent to the fathers of the students by preschool institutions. The training was carried out online via the zoom application. The introductory meeting was planned for different dates for each school. Among the fathers who attended the meetings, 42 volunteer fathers participated in the study. These fathers were matched and assigned to the groups randomly (experimental and control). Information about the study was given to the control group, and it was stated that the same training would be given to them in the next period if they wanted.

The 21 fathers who were trained continued without interruption for 11 weeks. Before starting the training, a pretest application prepared on Google forms was applied to the experimental and control groups. The Fatherhood Role Perception Scale was used as a pretest. After the training given to fathers, the Fatherhood Role Perception Scale was applied as a posttest to all fathers in the two groups. Training took place between November 2020 and January 2021. Eight weeks after the training, the Fatherhood Role Perception Scale was administered to the experimental group in April 2021 as a follow-up test.

Explaining the independent change variables of research with independent variables is called internal validity (Büyüköztürk et al., 2020). In the present study, some factors might threaten the internal validity of explaining the change in fathers' perceptions of the paternal role, the dependent variable, with the independent variable, fathers' meeting training. The factors that might threaten internal validity were examined by Büyüköztürk et al. (2020) under the following headings; the selection of the participants, the maturity of the participants, the data collection tool, the background of the participants, the effect of the participant loss, the pretest effect, the statistical regression, the interaction effect, the effect of expectations, and the effect of external variables (Büyüköztürk et al., 2020). Regarding these factors that pose a threat to internal validity, the following points were noted in this study. Forty-two fathers, matched according to various demographic characteristics, were assigned to the experimental and control groups. The matching and assigning control groups contributed to the elimination of the maturation effect as much as possible. In addition, attention was paid to select the

participant that had not participated in a similar educational experience before. Furthermore, thanks to distance education, the experimental and control group fathers would not interact with the pandemic conditions. The researcher carried out this process to eliminate the threat of the data collection process to internal validity. It is estimated that the pretest effect will also be eliminated, considering the training process takes about 3 months.

2.5. Data Analysis

Within the scope of this research, SPSS (Statistical Package for Social Sciences) 24.0 analysed the pretest, posttest, and follow-up test data applied to the two groups. Since the sample size is less than 30, nonparametric tests were used while analysing the data (Büyüköztürk, 2010). The data obtained in the study were analysed with nonparametric statistical methods since the groups consisted of 21 people. The Fatherhood Role Perception Scale data between the experimental and control groups were analysed using the Mann-Whitney U test (this test determines whether the scores obtained from two unrelated samples differ significantly from each other) (Büyüköztürk, 2010). The Wilcoxon Signed Ranks Test was used to analyse the in-group changes of the experimental and control groups on the Fatherhood Role Perception Scale. It is used to compare data obtained from measurements obtained at different times from the same sample group (Büyüköztürk, 2010).

2.6. Ethical

Permission from the ethics committee of Kocaeli University and institutional permission from Afyonkarahisar Provincial Directorate of National Education was obtained to conduct the research.

3. Findings

The primary purpose of this study is to examine the effect of Fathers Meet-up Training on participants' perception of fatherhood, which is applied to fathers with children attending preschool education. For this purpose, the pilot of the research was tested, and the findings were evaluated. Before the findings of the hypotheses, Mann Whitney U-test results regarding the pretest scores of the two groups from the Fatherhood Role Perception Scale are presented in Table 2 below. Descriptive statistics of the FRPS pretest, posttest, and follow-up scores of the fathers in the groups are presented in Table 3 below.

Table 2. *Mann Whitney U-Test Results Regarding Pretest Scores of Experiment and Control Groups from FRPS*

Groups	n	$\bar{X}$	SD	Mean Rank	Total Rank	u	z	p
Experimental	21	104.42	8.10	23,93	502,5	169,5	-1,285	0,199*
Control	21	100.14	9.66	19,07	400,5			

There was no significant difference between the two groups FRPS pretest mean scores (Table 2 above). It can be concluded that the fatherhood role perceptions in the two groups were equivalent to each other.

Table 3. *Pretest, Post-test and Follow-up Scores of FRPS and Standard Deviations of Experimental and Control Groups*

Measures	Pretest		Post-test		Follow-up	
Groups	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Experimental (N=21)	104.42	8.10	110.33	7.59	108.52	7.43
Control (N=21)	100.14	9.66	100.38	9.16	100.21	9.47

In Table 3 above, it was observed that the mean FRPS pretest score ($\bar{X}$ = 104.42) of the fathers in the experimental group increased in the posttest ($\bar{X}$ = 110.33). In the follow-up test, the mean score of the experimental group decreased ($\bar{X}$=108.52). It was observed that there was almost no change in the pretest, posttest, and follow-up test scores of the control group.

The first hypothesis of the present study is "Fathers' perception of fatherhood posttest score distributions of fathers who received Fathers' Meet-up Training, and fathers who did not receive this training were significantly higher than the posttest score distributions". Table 4 below shows the findings related to this hypothesis.

Table 4. *Mann Whitney U-Test Results Regarding the Posttest Scores of the Experimental and Control Groups from the FRPS*

Groups	n	Mean Rank	Total Rank	u	z	p
Experimental	21	27.76	583.0	89.0	-3.313	0.001*
Control	21	15.24	320.0			

p<.05*

The difference between posttest score distributions of the participating and non-participating fathers to the Fathers' Meet-up Training is significant at the level of .05 (Z = -3.313; p <0.05) (Table 4 above). According to the mean ranks, the experimental group participants have higher scores than those in the control group. This finding can be interpreted as the Fathers' Meet-up Training was effective on fathers' perception of fatherhood. This finding confirms the first research hypothesis.

The second hypothesis of the study is "The posttest scores of fathers who receive Fathers' Meet-up Training are higher than their pretest scores". In Table 5 below, the pretest and posttest scores of the experimental group obtained from the Fatherhood Role Perception Scale are analysed using the Wilcoxon Signed Ranks Test to identify any difference between them.

Table 5. *Wilcoxon Signed-Rank Test Results Regarding the Difference between Experimental Group Pre-Test and Post-Test Scores*

		N	Mean Rank	Total Rank	z	p
Pre-test Post-test Scores	Negative Rank	2	7.25	14.5	-3,241	0,001*
	Positive Rank	17	10.32	175.5		
	Equal	2				

*Based on negative ranks

There is a 0.5 level significant difference between the pretest and posttest score distributions (Z=-3.241; p<0.05) (Table 5 above). An important difference is identified in the posttest positive ranks. According to the results, it can be concluded that Fathers' Meet-up Training (applied to fathers in the experimental group) effectively increases the perception of the fatherhood role.

Table 6. *Wilcoxon Signed-Ranks Test Results Regarding the Difference between Experimental Group Post-Test and Follow-up Test Scores*

		N	Total Rank	Mean Rank	z	p
Post-Test Follow-up Test Scores	Negative Rank	13	127.0	9.77	-1.811*	0,070
	Positive Rank	5	44.0	8.80		
	Equal	0				

*Based on negative ranks

Eventually, the follow-up test was applied eight weeks after the application showed no significant difference between the posttest and follow-up test score distributions of the fathers who received Fathers' Meet-up Training, as stated in Table 6 above. Although the follow-up test means score ($\bar{X}$ = 108.52) was lower than the posttest mean score ($\bar{X}$ = 110.33), the difference between the follow-up test mean score and the posttest mean score was not significant. Additionally, the follow-up test means scores were higher than the pretest means scores. These two findings showed that the effect of Fathers' Meet-up Training on increasing the awareness of the fatherhood role continues even after eight weeks.

4. Conclusion and Discussion

This study researched the effect of online Father Meetings Training conducted with fathers with 3-6 years old children on their perceptions of fatherhood. The scores obtained from the "Father Role Perception Scale" administered as a pretest-posttest and follow-up test to fathers in the experimental and control groups were compared. Results identified no significant difference between the two groups before training. Then, the fathers in the experimental group were trained for eleven weeks, and at the end of the training, the posttest scores were calculated. The posttest scores showed that the participants' perceptions of fatherhood in the experimental group significantly increased. Although there was a decrease in the follow-up test compared to

the mean score obtained in the posttest, the difference between the follow-up and posttest mean scores were significant.

Studies in the relevant literature emphasise the effectiveness of the training programs for fathers. In a study (Alibeyoğlu, 2009) in which the father support program was applied, the program's effect on the child-rearing attitude was examined. It was found out that education had a significant impact on fathers' non-authoritarian attitudes. In a similar study, Mutlu (2018) concluded that the father training program was effective in all dimensions of family functions (e.g. problem-solving skills, communication skills, emotional responsiveness, paying attention, behaviour control, communication skills). In another study (Şalcı, 2020), the father support program was effective in fatherhood roles.

With the Fathers' Meetings Training implemented, fathers in the experimental group were trained on the father's role in the child's life, effective time with the child, active listening, empathy, and democratic relationship. These educations supported the perceptions of fathers about fatherhood roles. It can be said that this training applied to fathers creates a positive awareness with the increase in fathers' perception of the role of fatherhood. In their study, Telli and Özkan (2016) examined the factors affecting fatherhood and concluded that fathers' knowledge of fatherhood affected their perception of it. The relevant research findings stated that supporting fathers through various education would be necessary for a positive fatherhood role. Another study conducted by Uzun and Baran (2017) investigated the effect of training on fathers who had children in preschool regarding spending quality time with their children. After the ten-week father education program, it was observed that the quality time fathers spent with their children significantly increased. It could be concluded that father education programs positively changed fatherhood perceptions, enabling fathers to actively participate in the child's development and take responsibility for raising children.

The experimental group participants were informed that the democratic attitude would positively affect family relations in the present study. They were also told that it was the most effective attitude in the positive relationship with the child, within the scope of the family attitudes. Fathers attitudes towards children were determinant in the father-child relationship in the preschool period. The posttest results revealed that fathers have a positive attitude towards their children in parallel with the increasing score. A study by Taşkın and Erkan (2009) showed that the father education application applied to fathers with preschool and primary school children significantly increased fathers activities with their children (e.g. playing games with their children, establishing positive communication, and spending time outside). One of the essential points in parent education practices was that the training was more effective with parents who had younger-aged children (Heinrichs et al., 2002; Petermann, Helmsen & Koglin, 2010). Thus, it was essential to apply this study to fathers who had preschool children. Furthermore, it is known that with the increase in the time spent by fathers in business life, the duration and amount of their participation in studies for their children decrease (Marsiglio, 1991). For this reason, it is thought that online Fathers' Meet-up Training creates an opportunity for working fathers to participate compared to face-to-face training.

5. Recommendations

An important result of the present study is that the applied Online Fathers' Meet-up Training effectively improved participants awareness of fatherhood. As Cinel and Şahin (2021) stated, it was important to carry out online and face-to-face studies to generalise these studies and develop fathers fatherhood roles who especially had children in preschool. From this point of view, it was thought that it was important to apply this training online in such a period when face-to-face studies were restricted because of the Covid-19 pandemic. On the other hand, it may be suggested to plan online and face-to-face education programs with preschool children to increase the impact that will arise from training programs for fathers. Furthermore, this study was carried out with fathers who have preschool children. Fathers with children in different age groups can also participate to analyse the study's results more comprehensively. Therefore, it is important to carry out the Fathers' Meet-up Training with the participation of more fathers. In this study, fathers' perceptions of fatherhood were examined. The effects of the Fathers' Meet-up Training program can also be investigated with other variables. The small sample size can be one of the limitations of the study. Another limitation is that no study was conducted on fathers in the control group. Different studies to be conducted with the control group could contribute to the comparison with the experimental group.

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Examining Rater Biases of Peer Assessors in Different Assessment Environments[1]

Sabahattin YEŞİLÇINAR[2], Mehmet ŞATA[3]

[1]*Muş Alparslan University- Department of English Language Teaching, Muş, Turkey* *0000-0001-6457-0211*

[3]*Ağrı İbrahim Çeçen University- Department of Measurement and Evaluation in Education, Ağrı, Turkey* *0000-0003-2683-4997*

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ABSTRACT

The current study employed many-facet Rasch measurement (MFRM) to explain the rater bias patterns of EFL student teachers (hereafter students) when they rate the teaching performance of their peers in three assessment environments: online, face-to-face, and anonymous. Twenty-four students and two instructors rated 72 micro-teachings performed by senior Turkish students. The performance was assessed using a five-category analytic rubric developed by the researchers (Lesson Presentation, Classroom Management, Communication, Material, and Instructional Feedback). MFRM revealed the severity and leniency biases in all three assessment environments at the group and individual levels, drawing attention to the less occurrence of biases anonymous assessment. The central tendency and halo effects were observed only at the individual level in all three assessment environments, and these errors were similar to each other. Semi-structured interviews with peer raters (n = 24) documented their perspectives about how the anonymous assessment affected the severity, leniency, central tendency, and halo effects. Besides, the findings displayed that hiding the identity of the peers develops the reliability and validity of the measurements performed during peer assessment.

Keywords:
Many-facet Rasch analysis; rater bias; anonymous assessment; peer assessment; teacher assessment.

1. Introduction

Peer assessment requires individuals' active participation in the assessment process and helps them play both assessors and assesses (Li, 2017). Peer assessors usually give feedback to the product of others for either summative grading or formative feedback, or an integration of both (Li & Gao, 2015). When students see their peers work from the assessor's viewpoint, they become more professional assessors, determining the pros and cons of other students' works based on a rich set of items for assessment (Cho & MacArthur, 2010). However, when acting as assesses, students consider and reflect upon peer feedback and develop their work (Li et al., 2012). Student's ability to perform learning and assessment tasks rests on how they perceive these activities (Boud & Soler, 2016). If they consider themselves as talented peer assessors, their engagement in peer assessment will increase, and they will believe in the usefulness of peer assessment (Vanderhoven et al., 2015). The more students experience the peer assessment process, the more likely they will make sound peer assessment judgements (Panadero, 2016). Thanks to the latest change in the teacher training program (May 30, 2018), Turkey has started to consider using feedback in teacher education. Although using peer feedback is not at the desired level, it is used while assessing oral presentation skills, in particular for students' teaching

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[2]Corresponding author's address: Muş Alparslan University- Department of English Language Teaching, Muş, Turkey
e-mail: sycinar@yahoo.com
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performance within the scope of teaching practice course (Güneş & Kılıç, 2016). Therefore, this study is significant because it examines the impact of various assessment environments on rating quality.

1.1. Anonymity in Peer Assessment

A conceptual basis regarding the possible effect of anonymity indicates that students' feedback will differ depending on whether their identities as assessors are revealed (Yu & Sung, 2016). Publicly assessing their peers may cause students to feel uncomfortable and experience stress (Pope, 2005). Therefore, anonymity can be suggested to help alleviate the interpersonal burden on students (Yu & Liu, 2009), avoid the pressure of friendships (Cheng & Tsai, 2012), foster higher participation (Chester & Gwynne, 2006; Vickerman, 2009), and to provide a feeling of psychological safety (Miyazoe & Anderson, 2011; Yu & Liu, 2009), referring to "a shared belief denoting one's emotional ability to take an interpersonal risk without fearing negative consequences about one's well-being, self-image, and status" (Kahn, 1990; Zhang et al., 2010 as cited in Rotsaert et al., 2018, p. 78). Emphasising the crucial role of anonymity in decreasing reciprocity effects, Freeman and McKenzie (2000) advocate that anonymity for the assessor may lead to fairer assessment. Additionally, anonymity for assessors diminishes the fear of disapproval and help assessors experience less peer pressure when giving low scores or negative feedback (Vanderhoven et al., 2015). Furthermore, there is over-scoring if assessors and assessees are close friends (Panadero et al., 2013) because 'Relationships between students can colour opinions' (Papinczak et al., 2007, p. 180). These liberating effects are the basis of preferring anonymity to environments in which students are familiar with each other (e.g., Hosack 2004).

1.2. Objectivity and Rater Bias in Performance Assessment

Performance assessment refers to observing individuals' actions, determining their strengths and deficiencies based on the observation, developing their strengths, and determining and overcoming their shortcomings (Bennett, 1998). Performance assessment differs from traditional assessment. For example, performance assessment is based on real-life sections, focuses more on processes rather than the product, determines an individual's strength and weakness, and urges the individual to think more and solve problems (Brown & Hudson, 1998; Khaatri et al., 1995; Moore, 2009). The crucial concern about performance assessment is the objectivity of scoring an individual's performance as it is not easy to assess performance objectively, unlike traditional assessments (e.g. fixed response assessment) (Romagnano, 2001). Factors reducing objectivity in the performance assessment process are defined as rater bias or effect (Farrokhi et al., 2011; Cetin & Ilhan, 2017).

Kingsbury (1922) classifies rater biases as severity, central tendency, and halo effects. Raters can demonstrate serious differences in the severity and leniency of their rating due to their subjectivity or inconsistency (e.g., Bonk & Ockey, 2003; Weigle, 1998). If one or more rater biases occur when assessing performance, the bias amount of predictions will be high. That is, the predictions will cause unreliable measurements. Rater bias is attributed to construct-irrelevant variance, posing a direct threat of validity (Farrokhi et al., 2011; Messick, 1996). Therefore, how raters introduce construct-irrelevant variance is under discussion (Trace et al., 2017). Central tendency occurs when a rater shows more tendency towards the middle category than other categories (Royal & Hecker, 2016). According to Engelhard (1994), while some raters overuse extreme categories, others prefer the middle category. Anastasi (1976) states that avoiding using extreme scores decreases both reliability and validity since it significantly reduces the variability of the scoring. Halo effect refers to the tendency of any rater to provide the same scores to different individual characteristics when assessing the individual's performance (MyFord & Wolfe, 2004).

1.3. Many-Facet Rasch Measurement

Considering all sources of variability, MFRM also focuses on the interactions of these sources of variability (Abu Kassim, 2007). Unlike traditional two-category measurements, MFRM is defined as an extension of the partial credit model developed by Master (1982), which makes it possible to evaluate multi-category measurement tools (Myford, 2002). Being a linear model, MFRM calibrates all parameters and enables observed ratings to be transformed into a logit scale (Bond & Fox, 2015). Thanks to the logistic transformation of the log odds ratio, independent variables are seen as dependent variables (Esfandiari, 2015). In MFRM, each source of variability affecting the performance scores of individuals is called a facet (Sudweeks, Reeve & Bradshaw, 2005).

Regarding studies examining performance-based peer assessments, MFRM is proposed to give evidence of the reliability and validity of the scores and to eliminate the limitations of classical approaches (Baird et al., 2013; Kim et al., 2012). The factors that may affect the scoring during the performance assessment process are not limited to the individuals' ability or the difficulty levels of the items; rater-related issues may also cause variability in the scores of learner's performance (Baird et al., 2013). Therefore, MFRM becomes an appropriate option in the performance assessment where rater bias is effective. MFRM is also considered as a psychometrically stronger model than the classical test theory as it can determine the interactions between the facets (different error sources) (Haiyang, 2010), take into account multiple error sources at the same time and generate higher ability predictions for validity (Ilhan, 2016), and provide information on each facet at both group and individual levels (Barkaoui, 2013).

The current study investigated the rater biases that affected the students during peer assessment in terms of the assessment environments. Additionally, the development and assessment status of the students' performance was examined over time through intervals. Accordingly, the following questions were asked:

- Considering the assessment of students' teaching performance, do teacher and peer assessment differ according to the assessment environments?
- In terms of the assessment environments, *(i)* Do the severity and leniency biases of teachers and peer raters differ? *(ii)* Does the central tendency effect of teachers and peer raters differ? *(iii)* Does the halo effect of peer raters differ?

2. Methodology

2.1. Research Design

This paper adopted the explanatory sequential design (Schoonenboom & Johnson, 2017) to determine the rater biases occurring when students assess their peers' teaching performance. After collecting and analysing quantitative data, the researchers used the qualitative part to explain the initial quantitative results. Thus, quantitative analyses were carried out to identify the rater bias, and then qualitative data analyses were performed to determine the reason(s) for rater biases.

2.2. Research Sample

Participants were 24 senior students (17 females and 7 males) and two academicians (one female and one male) of English Language Teaching in a state university. The age average was 41 for academicians and 22 for students. Academics were chosen to see whether students' assessments in intervals reflect students' micro-teaching performance. The students were considered to have similar levels for two reasons. First, they matriculated at the same university, indicating that their university entrance scores were very close. Second, both the instructors' opinions and the micro-teaching scores of the first semester were taken into account. Those whose scores were between 70 and 85 were requested to participate in the study. There were 34 volunteers. After the corresponding researcher arranged a meeting and informed them about the process, only 24 students remained. After they signed a constant form, they were randomly recruited to the groups. The participants' names were changed to maintain anonymity (see Table 1). Every week, each group had two micro-teachings on different days.

Table 1. *Participants*

Assessment Environment	Participants
Face-to-face	FP1, FP2, FP3, FP4, FP5, FP6, FP7, FP8
Online	OP1, OP2, OP3, OP4, OP5, OP6, OP7, OP8
Anonymous	AP1, AP2, AP3, AP4, AP5, AP6, AP7, AP8

In the face-to-face assessment, peers were assessed and given feedback immediately after the micro-teaching. However, in anonymous assessment, peers were asked to assess and give feedback through Edmodo (https://www.edmodo.com/) on the same day. Participants in the anonymous group used different nicknames for each week to hide their identities. To find whether the difference between face-to-face and anonymous assessments is due to anonymity (not due to other variables), the researchers created a third assessment environment (online). The online and anonymous assessments process was the same; the only difference was that assessors were known in the online environment. Finally, the corresponding researcher interviewed all

participants separately to investigate their views about the assessment environments. Besides, they talked with participants in the anonymous environment to learn students' nicknames to examine a participant's assessments and feedback.

2.3. Data Collection

2.3.1. Quantitative data tool

Table 2 below presents the content validity ratios for the basic and sub-items included in the draft form.

Table 2. *CVR Values Related to Items Included in the Draft Form of the Measurement Tool*

Basic items	Sub-items	Necessary	Should be corrected	Unnecessary	CVR
Lesson Presentation	Starts a lesson in an engaging way.	7	0	0	1.000
	Uses time efficiently.	7	0	0	1.000
	Uses various teaching methods and techniques appropriately.	6	1	0	0.714
	Completes the whole course.	7	0	0	1.000
	Provides relevant examples and demonstrations to illustrate concepts and skills.	7	0	0	1.000
	Assigns tasks appropriate to student level.	7	0	0	1.000
	Facilitates smooth and effective transitions between instructional activities.	6	1	0	0.714
	Summarises the main point(s) at the end of the lesson or instructional activities.	7	0	0	1.000
Classroom Management	Manages discipline problems	7	0	0	1.000
	Creates a stimulating and effective environment for learning	7	0	0	1.000
	Creates opportunities for and manage individual, partner, group, and whole class work.	7	0	0	1.000
Communication	Communicates effectively with students	6	1	0	0.714
	Gives clear explanations and instructions	5	0	2	0.429*
	Speaks fluently and precisely	7	0	0	1.000
	Decides when it is appropriate to use the target language and when not to.	7	0	0	1.000
Material	Prepares appropriate tools and materials	6	0	1	0.714
	Uses appropriate tools and materials	4	1	2	0.143*
	Uses material in an organised manner.	7	0	0	1.000
	Uses material at an appropriate pace.	7	0	0	1.000
Instructional Feedback	Provides prompt feedback on assigned work	5	1	1	0.429*
	Provides sustaining feedback after an incorrect response	7	0	0	1.000
	Uses appropriate type and amount of feedback for target behaviours	6	0	1	0.714
Content Validity Index (CVI)					0.925

*CVR < .622

To assess students' teaching performance, researchers developed the *Analytic rubric for performance* (ARP) based on the literature, following a systematic process that includes certain stages (Akpınar, 2019). This is because preparing rubrics without considering this process negatively affects the validity and reliability of the assessment (Moskal, 2000). While developing the analytical rubric, the recommendations of Goodrich (1997), Haladyna (1997), Kutlu et al. (2014), and Moskal (2000) were considered. In this context, a systematic process has been followed. First, the purpose of the measurement tool was determined, and measuring student teachers' teaching performance was considered the main objective. Then, the literature was searched to determine the criteria (Newby et al., 2007; Schools & Chesterfield, 2015). After determining the criteria, two academicians who were experts in measuring the relevant performance prepared the draft version of the

measurement tool. A draft form was sent to seven field experts to collect evidence for content validity. Then, two field experts and a measurement and evaluation specialist were consulted to determine how many levels each criterion should have. It was concluded that the quadruple rating would be appropriate in measuring the relevant structure. Finally, regarding the type of rubric, it was decided that the most appropriate type for the relevant performance would be analytical. The researchers first prepared a draft form consisting of 22 items and then sent it to seven experts. They were asked to assess the items through a measurement tool with triple rating: (1) necessary, (2) should be corrected, and (3) unnecessary. The Lawshe (1975) approach was taken into account for the content validity of the items in the rubric. Since seven experts were administered, the minimum content validity ratio (CVR) was accepted as 0.622 (p = 0.05) to acknowledge that an item measures the relevant structure (Wilson et al., 2012). Accordingly, the items whose CVR values were equal to or higher than 0.622 were included in the main form of the measurement tool. Three sub-items were lower than the threshold value of the CVR. Therefore, they were removed from the rubric, and the final form consisted of 19 sub-items and five basic items. After calculating the CVR of the items, the content validity index (CVI) was obtained for the whole measurement tool (Lawshe, 1975). CVI is the construct validity process (Lawshe, 1985) and was 0.925, indicating a higher value. This shows that the related instrument could measure students' teaching performance. In line with the literature and the opinions of the field experts, the measurement tool adopted four categories (1 = poor, 2 = fair, 3 = good, and 4 = outstanding).

Considering construct validity, the tetracolic exploratory factor analysis (EFA) was carried out. During the tetracolic EFA, each student's scores in the first interval were taken into consideration. Each item was measured 216 (24 x 9) times, as seven peers and two teachers assessed each student. The tetracolic EFA was made on this data set using the Mplus package program. As a result, 19 items were found to be collected under a single latent factor. The instrument was a four-point scale, so handling it at the ordinal scale level rather than the continuous scale will contribute to the validity and reliability of the measurements. Thus, the researchers used tetracolic EFA, which provides more consistent estimates for ordinal scales.

Table 3. *Model-Data Fit Indices for the Tetracolic EFA*

Model-Data Fit Criteria	Acceptable Fit	Estimates
$\chi 2$/sd value	$2 \leq \chi 2/sd \leq 5$	2.595
RMSEA (%90GA)	0.05≤RMSEA≤0.10	0.086 (0.076-0.096)
CFI	0.90 ≤CFI< 0.95	0.994
TLI (NNFI)	0.90 ≤NNFI< 0.95	0.993
SRMR	0.05 ≤SRMR< 0.10	0.041

The model data fit criteria for the tetracolic EFA were at acceptable values. Cronbach α reliability coefficient was used for the reliability of the measurements and found to be 0.977 (95% Confidence Interval: 0.972-0.981). Findings indicated that the measurements of the ARP gave valid and reliable results.

2.3.2. Qualitative data tool

Semi-structured interviews were conducted to "help explain, or elaborate on, the quantitative results obtained in the first phase" (Ivankova et al., p. 5). They were conducted in students' native language to ensure the quality and quantity of the data (Mackay & Gass, 2005). Before data collection, the interview protocol was reviewed for accuracy and then piloted. All interviews were recorded and took place mostly in the corresponding researcher's office. Each lasted between 35 and 45 minutes. The total duration was 945 minutes.

2.4. Data Analysis

2.4.1. Quantitative data analysis

MFRM, Mann Whitney U test, and the Friedman test were used for data analysis. There were five facets (individual, raters, assessment items, rater type, and interval). A completely crossed design was used since students were scored by all raters and from all items. MFRM was applied under this pattern. Some assumptions must be met for the analyses made using MFRM to make consistent estimates. These assumptions are unidimensionality, and local independence, model-data fit. To use MFRM, the instrument needs to measure a single construct. As all items in the ARP measured a single construct, the first assumption (unidimensionality) was met. Then, the local independence assumption was tested using the G2 statistics developed by Chen and Thissen (1997). The local independence requirement was determined to be met for

each item because the standardised LD $\chi 2$ values estimated between each variable pair were below 10, and the marginal fit $\chi 2$ indices estimated for each item were close to zero. Considering model-data fit, the number of standardised residual values out of the ± 2 range should not exceed 5% of the total number of observations and standardised residual values out of the ± 3 range should not exceed 1% of the total data (Linacre, 2017). Thus, the model-data fit was assumed to be achieved for three assessment types since the total number of observations for anonymous assessment was 8x9x19x3 = 4.104, while the number of standardised residual values out of the ± 2 range was 258 (6.29%), and the number of standardised residual values out of the ± 3 range was 72 (1.75%). The total number of observations for face-to-face assessment was 8x9x19x3 = 4.104, while the number of standardised residual values out of the ± 2 range was 227 (5.53%), and the number of standardised residual values out of the ± 3 range was 7 (0.50%). The total number of observations for online assessment is 8x9x19x3 = 4.104, while the number of standardised residual values out of the ± 2 range was 270 (6.58%), and the number of standardised residual values out of the ± 3 range was 82 (1.99%). As a result, all assumptions were met, and thus analyses were performed.

2.4.2. Qualitative data analysis

Nvivo was used to analyse the qualitative data. However, the qualitative data were initially manually analysed as a piloting process (Welsh, 2002) so that the researcher could observe, control, and manage the data. This process enabled the researchers to take precautions for data loss. Content analysis was used, which means that all categories were determined while analysing the transcripts. First, all interviews were transcribed. The researchers adopted an 'edited transcription' (Hansen, 2003, p. 136) to ease the analysis process and read the data for getting a general idea. Then, they examined and categorised the data independently.

3. Findings

This study examined whether there is a significant difference between peer and teacher assessment in assessment environments (anonymous, face-to-face, and online) over time (three intervals/measurements). Besides, rater biases (severity, leniency, halo, central tendency, differentiatial severity, and differentiatial leniency) were studied considering the assessment environments. A model was established for each assessment environment, and three Rasch analyses were performed. Findings were presented under the relevant headings.

3.1. Teacher and Peer Assessment in Terms of Assessment Environment

The Mann Whitney U test was used to determine whether teacher and peer assessment differ statistically according to the assessment environments and assessment intervals.

Table 4. *Mann Whitney U Test on Teacher and Peer Assessment*

Assessment environments	Interval	Assessment Types	N	Mean Rank	Sum of Rank	U	Z	p	η2
Face-to-face	1. Measure	Peer	56	43.22	2420.50	71.50	-5.10	0.000*	0.60
		Teacher	16	12.97	207.50				
	2. Measure	Peer	56	43.98	2463.00	29.00	-5.68	0.000*	0.67
		Teacher	16	10.31	165.00				
	3. Measure	Peer	56	43.93	2460.00	32.00	-5.65	0.000*	0.67
		Teacher	16	10.50	168.00				
Online	1. Measure	Peer	56	43.50	2436.00	56.00	-5.32	0.000*	0.63
		Teacher	16	12.00	192.00				
	2. Measure	Peer	56	42.83	2398.50	93.50	-4.81	0.000*	0.57
		Teacher	16	14.34	229.50				
	3. Measure	Peer	56	43.13	2415.50	76.50	-5.04	0.000*	0.59
		Teacher	16	13.28	212.50				
Anonymous	1. Measure	Peer	56	38.85	2175.50	316.50	-1.78	0.075	--
		Teacher	16	28.28	452.50				
	2. Measure	Peer	56	38.35	2147.50	344.50	-1.40	0.161	--
		Teacher	16	30.03	480.50				
	3. Measure	Peer	56	38.99	2183.50	308.50	-1.89	0.058	--
		Teacher	16	27.78	444.50				

P.S. *p < .05 Criteria: "Peer=1"; "Teacher=2"; N shows the total scores made, not the number of people (For peer 7x8 =56, for teachers 2x8 =16).

Table 4 above shows a statistically significant difference between peer and teacher assessments in all three intervals (p <.05) for online and face-to-face environments. Considering the effect sizes of these differences, which were found statistically significant, all had a large effect size. However, no statistically significant difference occurs between the peer and teacher assignments in all intervals of the anonymous assessment environment (p <.05).

The researchers interviewed all participants to obtain in-depth information about the reason(s) for this situation, focusing on whether students favoured their assessment environments (if yes, why; if no, why). Almost all participants approved anonymous assessments but disapproved of face-to-face and online assessments due to recognising the identity as assessors. Anonymity helps them feel safe to assess their peers, which results in fair and objective assessments and scores. Besides, as there is no peer pressure, they feel comfortable evaluating their peers to give more critical feedback. These findings may explain why peer and teacher assessments were close to each other in the anonymous assessment. However, those who assessed their peers face-to-face and online complained about being known as assessors, which causes peer pressure, unfair and subjective assessment.

Table 5. *Opinions of Participants Related to Assessment Environments*

Codes	*f*	Representative excerpts
(No) peer pressure	23	I felt compelled to give high scores due to the possible reactions of my peers (FP1) My identity was known, so I couldn't give a low score to avoid peer pressure (OP3) I felt safe to assess my peers; therefore, my score was influenced by my peers (AP8)
(Un)fair assessment (Objective & subjective scoring)	18	It was not a fair process because I could not score my peers in an honest way (FP5) My scoring was subjective because the assessees were aware of my identity (OP2) Since neither the assessors nor the assesses knew which scoring was mine, I could make a fair assessment (AP2)
(Un)critical feedback	17	Although I did not like Ali's (pseudonym) teaching, I gave positive and superficial feedback to prevent our friendship from being damaged (FP4) If I were the lecturer or if my identity had not been known, I would have given appropriate feedbacks to the lessons performed by Hakan, Ali and Pelin (pseudonyms) (OP5) Anonymity let me provide substantively critical feedback on the performance of my peers (AP1)
Feel (un)comfortable when evaluating	17	How can I feel comfortable if my friends learn the low scores I gave? (FP6) It is annoying to know that your peers will judge you for not giving high scores (OP7) As no one knew which scoring was mine, I felt quite comfortable during the assessment procedure (AP4)

The assessment environment affects students' assessment. Thus, MFRM was applied to determine rater biases that caused this difference. MFRM was carried out within the scope of a fully crossed design.

As is seen in Table 6 above, the discrimination rate, discrimination index, and discrimination index reliability were high (students were distinguished successfully according to their teaching performance, the raters exhibited different behaviours in performance assessment, there was a difference in assessing the performance of the individual according to the assessment environments, the evaluations in all three time periods were different from each other, the peer and teacher assessment differed in the performance assessment, and the items could correctly distinguish the students' teaching performance). The chi-square values displayed a statistically significant difference (p <.05). In other words, the difference between the elements that make up each facet was statistically significant. The chi-square value, standard deviation, discrimination index, and the reliability of the discrimination index predicted for anonymous assessment were lower than face-to-face and online assessments. After analysing the Rasch analysis results for each facet, the rater bias was tried to be determined. Each rater bias is presented in separate headings.

Table 6. *Many-Facet Rasch Analysis for Online, Face-to-face and Anonymous Assessments*

Assessment Environments	Measurements	Person	Rater	Interval	Rater Type	Item
Online Assessment	Mean of rating observed	3.12	3.14	3.33	2.89	3.12
	Standard deviation of rating observed	0.38	0.35	0.26	0.58	0.23
	Logit minimum value	-1.15	-2.15	-1.70	-1.21	-2.93
	Logit maximum value	4.90	0.96	1.31	1.21	1.79
	Logit mean	2.86	0.00	0.00	0.00	0.00
	Logit standard deviation	2.27	1.05	1.54	1.71	1.35
	RMSE	0.11	0.12	0.07	0.06	0.17
	Discrimination rate	20.69	8.46	22.85	26.50	7.89
	Discrimination index	27.92	11.61	30.80	35.66	10.85
	Chi-square	3 047.70	733.80	1 080.70	703.10	1 157.60
	p-value (for $\chi 2$)	0.00	0.00	0.00	0.00	0.00
	Discrimination index reliability	1.00	0.99	1.00	1.00	0.98
Face-to-Face Assessment	Mean of rating observed	2.96	2.98	2.96	2.70	2.96
	Standard deviation of rating observed	0.36	0.41	0.24	0.68	0.21
	Logit minimum value	-0.80	-2.07	-1.19	-1.14	-2.59
	Logit maximum value	3.77	1.18	1.10	1.14	1.18
	Logit mean	1.53	0.00	0.00	0.00	0.00
	Logit standard deviation	1.81	1.08	1.15	1.61	1.01
	RMSE	0.10	0.11	0.06	0.06	0.15
	Discrimination rate	18.37	9.69	19.05	28.18	6.58
	Discrimination index	24.83	13.25	25.74	37.91	9.10
	Chi-square	2 351.80	954.10	725.90	795.20	794.70
	p-value (for $\chi 2$)	0.00	0.00	0.00	0.00	0.00
	Discrimination index reliability	1.00	0.99	1.00	1.00	0.98
Anonymous Assessment	Mean of rating observed	2.91	2.92	2.91	2.84	2.91
	Standard deviation of rating observed	0.61	0.16	0.37	0.18	0.28
	Logit minimum value	-3.50	-0.57	-2.15	-0.36	-3.58
	Logit maximum value	5.49	0.60	1.88	0.36	2.35
	Logit mean	1.95	0.00	0.00	0.00	0.00
	Logit standard deviation	3.31	0.38	2.03	0.51	1.58
	RMSE	0.11	0.12	0.06	0.06	0.16
	Discrimination rate	31.21	3.10	31.41	8.11	9.69
	Discrimination index	41.94	4.46	42.21	11.15	13.26
	Chi-square	7 116.20	98.90	1 954.80	66.80	1 676.90
	p-value (for $\chi 2$)	0.00	0.00	0.00	0.00	0.00
	Discrimination index reliability	1.00	0.91	1.00	0.99	0.99

RMSE: square root of mean square error

3.2. Rater Severity and Leniency

Group and individual-level statistics were examined during the examination of rater bias. Considering the group-level statistics, discrimination rate, discrimination index, and discrimination index reliability were high. These values indicate that the raters behaved differently while assessing their peers. Then, the logit measure, one of the individual-level statistics was run. Since the logit measure did not have a critical value for severity and leniency, the t-value obtained using logit values was used.

All raters, except one, exhibited severity and leniency biases in the face-to-face assessment; two raters showed severity and leniency biases in the online assessment; three raters displayed severity and leniency biases in anonymous assessment. Teacher assessment had severity bias in all three assessment environments. Specifically, when the t-value of the teacher assessments in the face-to-face and online assessment environments was examined, teachers were observed to be more severe than peers. This might be due to the

leniency bias of peers while assessing each other. Regarding anonymous assessment, the t-value of teacher assessment was much smaller, and there were more peers with neutral behaviours.

Table 7. *T-Values of Raters*

	Face-to-face		Online		Anonymous	
Raters	t-value	p- value	t- value	p- value	t- value	p- value
Peer1	9.83	0.00*	7.38	0.00*	5.00	0.00*
Peer2	7.55	0.00*	4.92	0.00*	3.42	0.01*
Peer3	7.36	0.00*	4.77	0.00*	2.92	0.02*
Peer4	6.09	0.00*	4.46	0.00*	0.58	0.57
Peer5	3.64	0.01*	2.69	0.02*	-0.17	0.87
Peer6	3.18	0.01*	2.83	0.02*	-0.25	0.81
Peer7	-2.27	0.05	2.08	0.07	-0.75	0.47
Peer8	-3.27	0.01*	0.67	0.52	-1.42	0.19
Teacher1	-15.70	0.00*	-15.27	0.00*	-5.00	0.00*
Teacher2	-20.70	0.00*	-19.55	0.00*	-5.18	0.00*

*p < .05; tcritic (0.05;9) = 2.26

One interview question was, "What do you think about the correlation between peer and teacher assessment in terms of scoring?". Supporting the quantitative results, the qualitative data emphasised that teachers were not severe; on the contrary, students' leniency bias created this misunderstanding. Students in online and face-to-face environments were inclined to give higher scores due to the reasons above, including recognition of identity, social influence, and relationships based on mutual interests.

Table 8. *The reasons for severity and leniency*

Codes	F	Representative excerpts
Recognition of the identity	16	The situation is not the same for us. For example, I didn't feel comfortable while assessing because they knew which scoring was mine (OP3) The difference between peer and teacher assessment is due to non-anonymity. The scores given by teachers reflect the quality of the performance. However, our scores symbolise our companionship. (FP2) I usually give high scores to peers as I do not want my value to decrease for them. (FP5)
Social influence	10	I felt inhibited to give low scores during the peer assessment procedure because of the presence or action of peers. (OP1)
Relationship-based on mutual interests	5	… there is a relationship based on mutual interests. If you give high scores, you receive high scores too or vice versa. (OP5) I don't give low scores to those who gave me high scores (FP5)

3.3. Central Tendency

The first step was to examine category statistics, one of the group-level statistics.

Table 9. *Calculated Category Statistics for Assessment Environments*

Assessment environments	Rating categories	Frequency	%	Cumulative %	Average logit measure	Expected logit measure	Outfit
Face-to-face	1	136	3	3	-4.33	-4.09	0.80
	2	828	20	23	-0.86	-0.99	1.10
	3	2 198	54	77	2.32	2.38	1.10
	4	942	23	100	5.19	5.14	0.90
Online	1	69	2	2	-5.10	-5.10	1.00
	2	614	15	17	-1.08	-1.21	1.20
	3	2 185	53	70	3.09	3.16	0.90
	4	1 236	30	100	6.90	6.84	0.90
Anonymous	1	242	6	6	-5.31	-5.18	0.90
	2	885	22	27	-1.86	-1.79	0.80
	3	1 967	48	75	2.68	-0.51	1.10
	4	1 010	25	100	6.36	5.33	1.20

The most preferred rating category was good (the third one), and the least preferred was poor (the first one). This might be due to the central tendency effect and moderate individual performance. Discrimination rate, discrimination index, and discrimination index reliability concerning individual facet were found high. In

other words, students' teaching performance was determined to be differentiated successfully from each other. In this case, the current situation in the rating categories results from the student's performance. That is, no central tendency effect was determined at the group level for all three assessment environments. The outfit and infit values for the rater facet and the category statistics calculated for each rater were examined to determine whether there was a central tendency effect at the individual level. It was observed that all raters' outfit and infit values were within the acceptable ranges (0.5 and 1.5).

Table 10. *Category Statistics Calculated for Each Rater*

Assessment Environment	Rater	Outfit Statistics				Central Tendency
		Category 1	Category 2	Category 3	Category 4	
Face-to-face	Peer1	-	1.10	1.10	0.90	No
	Peer2	-	1.10	0.90	0.90	No
	Peer3	-	0.90	1.20	1.00	No
	Peer4	-	1.00	1.00	0.90	No
	Peer5	**1.70**	**1.70**	1.30	1.10	Yes
	Peer6	1.00	0.90	0.70	0.90	No
	Peer7	-	0.90	1.10	0.90	No
	Peer8	1.10	0.90	1.00	1.00	No
	Teacher1	0.80	1.20	1.20	0.90	No
	Teacher2	0.70	0.90	1.10	1.00	No
Online	Peer1	-	1.40	0.70	0.70	No
	Peer2	-	**1.70**	0.70	0.70	Yes
	Peer3	-	1.10	0.60	0.80	No
	Peer4	-	**1.60**	0.90	0.60	Yes
	Peer5	-	**2.10**	1.10	1.10	Yes
	Peer6	-	1.50	1.40	1.40	No
	Peer7	1.20	1.30	0.70	0.90	No
	Peer8	-	0.60	0.80	0.80	No
	Teacher1	1.30	1.30	1.20	1.10	No
	Teacher2	0.90	1.00	0.90	0.70	No
Anonymous	Peer1	0.60	1.50	0.90	1.00	No
	Peer2	1.00	1.00	1.70	1.20	Yes
	Peer3	1.00	0.60	0.90	1.20	No
	Peer4	0.80	0.70	1.20	1.20	No
	Peer5	0.80	0.60	1.00	1.10	No
	Peer6	1.50	0.80	1.20	1.40	No
	Peer7	1.00	0.90	0.90	1.20	No
	Peer8	0.90	0.70	1.00	1.50	No
	Teacher1	0.60	0.80	1.40	1.50	No
	Teacher2	0.70	0.70	0.80	1.00	No

One of the raters in the face-to-face assessment (Peer5), three in the online assessment (Peer2, Peer4, and Peer5), and one in the anonymous assessment (Peer2) exhibited a central tendency effect when assessing students' teaching performance. Although all anonymous raters preferred the first category, it was ignored by the majority in the other assessment environments. Since the identity of the raters in face-to-face and online assessment environments were known, they could not give a "poor" rating. Interviews confirmed the quantitative data, emphasising that recognising assessors' identity and personality clash might cause central tendency.

Table 11. *The Reasons for Central Tendency*

Codes	f	Representative excerpts
Recognition of the identity	16	Even I did not like my peers' performance, I usually tick "fair" instead of "poor" because they knew it was my score. (OP5) I felt inhibited to give low scores during the peer assessment procedure because of the presence or action of peers. (OP1)
Personality clash	10	I lowered a score when I didn't like a peer. (FP8) If a peer had disturbing behaviour, I lowered his/her score. (FP6)

3.4. Halo Effect

During the performance assessment process, the measurement report related to the item facet was investigated to determine the halo effect at the group level. Discrimination rate, discrimination index, and discrimination index reliability were found high. These high values indicate that the items had different performance levels and successfully differentiated the individual's performance from each other so that the halo effect did not interfere with the ratings. On the other hand, no halo effect was observed at the group level. Thus, the difference between the calculated logit values for rating criteria was examined, and this difference was found to be significantly higher than one in three assessment environments. In this context, raters whose fit statistics were statistically higher than one are stated to exhibit the halo effect (MyFord & Wolfe, 2004).

Table 12. *The infit and Outfit Fit Values for the Raters*

	Face-to-face				Online				Anonymous			
Rater	Infit MnSq	Zstd	Outfit MnSq	Zstd	Infit MnSq	Zstd	Outfit MnSq	Zstd	Infit MnSq	Zstd	Outfit MnSq	Zstd
Peer1	1.06	0.8	1.07		1.00		0.95	-0.3	1.06	0.8	1.10	0.7
Peer2	0.98	-0.2	0.99		0.85		0.77	-2.1	1.01	0.2	0.98	-0.1
Peer3	0.97	-0.4	0.91		1.21		1.26	2.1	1.11	1.4	1.30	2.1
Peer4	0.93	-1.1	0.88		0.81		0.73	-2.6	1.06	0.7	1.04	0.3
Peer5	0.99	0.0	0.99		0.81		0.73	-2.6	1.14	1.8	1.18	1.6
Peer6	0.96	-0.5	0.95		0.86		0.76	-2.4	0.99	-0.1	0.96	-0.3
Peer7	1.01	0.1	0.97		1.28		1.31	2.7	0.93	-0.9	0.90	-0.8

The values that raters received did not differ from one in all three assessment environments. For the final decision whether there is a halo effect at the individual level, the item difficulties were equalised, and raters whose infit and outfit values were equal to one were assumed to show the halo effect. After balancing the item difficulties for each assessment environment and examining the raters' infit and outfit values, only a peer (peer7) exhibited the halo effect in the online assessment.

Students answered the following questions during the interviews: "Does the overall impression of a peer impact your assessment of that peer's performance? Is there a relationship between one's attractiveness and the quality of his/her teaching?" The participants' statements justified the quantitative findings, indicating that students did not have a halo effect.

> *During the peer assessment, as you can see on Edmodo, I only focused on the quality of peers' teaching.* OP4

> *We were asked to assess our peers' teaching performance, not personality. Thus, whether the assessee was an attractive peer or a close friend did not interfere in my scoring.* AP6.

4. Conclusion and Discussion

This paper aimed to examine the rater biases involved in the measurements when their peers and teachers assessed the teaching performance of students and to determine the reasons for these biases. The ARP developed by the researchers to assess students' teaching performance was found to provide valid and reliable measurements. Thus, it is recommended that further studies use the ARP when examining the teaching performance of students.

A statistically significant difference was found between the teacher and peer raters in the online and face-to-face assessment environments. In contrast, no statistically significant difference was found between anonymous teachers and peer raters. Besides, the obtained significant difference was noted to have a large effect size. Considering the intervals, the difference between the teacher and peer raters was statistically significant in the online and face-to-face assessment environments, but it was insignificant in anonymous assessment. The qualitative data were performed to examine why teachers and peers had similar scoring in anonymous assessment and anonymity was found to be an important factor for this situation, confirming the previous research (Cheng & Tsai, 2012; Chester & Gwynne; Pope, 2005; Yu & Sung, 2016; Vickerman, 2009). Thus, anonymity provides a safe environment for peer raters, which results in fairer assessment as there is no over-scoring (Freeman & McKenzie, 2000; Panadero et al., 2013).

The severity and leniency biases were observed during teaching performance assessment at individual and group levels, confirming various studies (Knoch et al., 2018). This shows that the severity and leniency biases

are important behaviours in rater inconsistency (Kane et al., 1995). Considering the severity and leniency biases at the individual level, the anonymous assessment was found to have the least bias. In contrast, the online and face-to-face assessments displayed similar biases. According to qualitative data, this is due to the recognition of their identity as assessors. In other words, when the assessors' identity is known, friendship comes to the fore rather than the actual performance of the individuals. As the assessor was not known in the anonymous assessment, few peer raters showed the severity and leniency biases. It is stated in the literature that peers are stressed during the scoring process when their identities are known (Pope, 2005; Yu & Sung, 2016).

Central tendency is another error involved in measurements originating from the raters when assessing the performance of the individuals. No central tendency effects were found at the group levels in this research. The literature supports this result. The study conducted by Esfandiari (2015) emphasises that some of the raters showed the central tendency effects during the assessment of the academic writing skills at the individual level but not at the group level. Also, the central tendency effects appeared less in performance assessment compared to the severity and leniency biases. This result shows that the most common behaviours in performance assessment are the severity and leniency biases (Cronbach, 1990). Considering the central tendency effects at the individual level, one rater preferred a certain category of the measurement tool more than other raters in the face-to-face and anonymous assessments, whereas three raters did in online assessment. When qualitative interviews were analysed for why all three raters preferred the second category and never chose the first category in online evaluation, they were observed to avoid choosing the first category and favour the second category as the identity of peer assessors was known. This confirms Yu and Sung (2016), who advocates that students' feedback will vary depending on whether their identities as assessors are revealed.

Another rater bias frequently is the halo effect. Farrokhi and Esfandiari (2011) examined the interference of the halo effect in performance during the process of peer, self, and teacher assessment. They found that the halo effect occurred in all three evaluation types. However, the current study found no halo effect at the group and individual levels (except one rater) regarding all three evaluation environments. This may be because students were knowledgeable about the halo effect and its consequences. As Myford and Wolfe (2004) suggested, raters should be informed about the halo effect and how it affects the scores.

When peer raters participate in the scoring process (assessment), the validity and reliability of the scoring become a major concern (May, 2008). Therefore, evidence must be gathered for the validity and reliability of the assessments. In this context, in the current study, evidence was collected for the validity of the measurements by examining the rater biases involved in the measurements during the peer assessment process. The current study provided the following results:

- The recognition of the identity was effective on scoring when peers assessed the teaching performance of students. It was also found that there was a difference between the scores made over time.
- The severity and leniency biases were observed in the peer assessment process at the individual and group levels. In addition, peer raters exhibited more leniency biases instead of severity biases. The anonymous assessment was found to have the least bias, while the online and face-to-face assessments exhibited similar biases.
- There were no central tendency and halo effects at the group level, but they were found to interfere with the measurement at the individual level.

Based on the findings of the current study, the following recommendations were provided:

- During the performance assessment process, rater training can be arranged to reduce the rater biases.
- Anonymity in the peer assessment process can contribute to the validity and reliability of the measurements.
- Considering the similarity of scores in face-to-face and online assessment environments, either of them can be used in the peer assessment process.

As can be seen from the results of this research, rater biases are inevitable in the performance evaluation process. In this context, further research can focus on the effectiveness of rater training and investigate whether rater training will effectively reduce these biases. While explaining the rater bias patterns of EFL students, this study ignored the gender variable because the majority were females. Further studies may investigate whether females and males differ in terms of severity and leniency.

5. Limitations

Research has some limitations. First, the findings may not be generalised as the study was conducted with students in the English language teaching department. Another limitation is that only four rater biases most involved in the measurements were considered in this study, although peer raters have many rater biases when evaluating individual performance. Another limitation is that the raters in this research are novice/inexperienced. The last limitation is that students' teaching performance was examined, but their performance in other lessons was not considered.

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Investigation of the Relationship between Reading Habits and Metacognitive Reading Strategies of Prospective Teachers

Hanife ESEN-AYGÜN[1], Berfu KIZILASLAN TUNÇER[2]

Çanakkale Onsekiz Mart University, Educational Sciences, Çanakkle, Turkey *0000-0001-9363-7083*

Canakkale Onsekiz Mart University, Primary Education, Çanakkale, Turkey, *0000-0001-5184-4869*

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ABSTRACT

The purpose of this study is to investigate the relationship between prospective teachers' metacognitive reading strategies and their reading habits. The study was designed in correlation model. The sample of the study was determined by simple random sampling. The sample of the study consists of 506 prospective teachers out of which 255 are on Primary Education and 249 are on Preschool Education. In the research, Book Reading Habit Attitude Scale and Metacognitive Reading Strategies Scale were used as data collection tools. While there is no significant difference in the reading habits of the prospective teachers, there is a significant difference in the use of metacognitive strategies in favor of the female prospective teachers. The reading habits of prospective teachers and the extent to which they use metacognitive reading strategies do not differ by department and grade level. In addition, it was found that there was a moderately significant relationship between prospective teachers' use of metacognitive reading strategies and the level of reading habits.

Keywords:
Reading habits, metacognitive reading strategies, prospective teacher.

1. Introduction

The primary purpose of schools is to prepare children successfully for life and a higher education institution. Given this goal, it is thought that being successful is that students get good grades from various exams. Accordingly, students are asked to read, understand and answer exam questions carefully. In other words, it is expected to understand what you are reading. Accordingly, the concept of being able to understand what it reads comes to the fore. When the literature examines, it is understood that the capacity to understand what he read is important not only in the teaching of mother tongue, but also in other courses (Ateş, 2008; Batur, Gülveren, & Bek, 2010; Belet & Yaşar, 2007; Demirel, 1993; Göktaş & Gürbüztürk, 2014). Because reading is very important skill for child's success in school life (Leppänen, Aunola & Nurmi, 2005). Based on this information, studies related to reading activities come to the fore, especially during the preschool period when students first meet with voices and the elementary school period when they combine these voices. Fluent and effective reading skills are the most important achievement children need at school (Høien & Lundberg, 1998). Research shows that gaining reading skill and reading became a habit occurred in primary school years (Güneş, 2007). Therefore, giving children reading skills and making reading a habit are among the primary objectives of primary education (Karadağ, 2014). Accordingly, it is thought that gaining a positive attitude towards reading in early ages will positively affect the reading habits (RH). The student with RH will be more successful in reading-related activities.

[1] Corresponding author's address: Çanakkale Onsekiz Mart University, Educational Sciences, Çanakkle, Turkey
e-mail: hanifeesen@comu.edu.tr
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Reading habit is that individuals see reading as a necessity, enjoy the material they read, criticize what they read and continue it for life (Can, Türkyılmaz, & Karadeniz, 2010; Clark & Foster, 2005; Hopper, 2005; Hughes - Hassell and Rodge, 2007 ; Nathanson, Pruslow & Levitt, 2008; Odabaş, Odabaş, & Polat, 2008; Yılmaz, 1998). Lifelong reading habit is gained in schools (Sanacore, 1992). It can be said that having a positive attitude towards reading during school years turned into a habit of reading in the future. For this reason, it is thought that teachers are an important model for giving children the habit of reading books at an early age. The teacher is an individual with a strong influence on students (Aslantürk, 2008). In particular, when studies related to reading are examined, it is known that teacher is a model and encouraging students to read in gaining reading habit (Çakmak & Yılmaz, 2009; Odabaş, Odabaş & Polat, 2008; Özbay, 2006; Yılmaz, 2006). In addition, research reveals that giving time and opportunity for individuals to read what they love has a role in developing reading skills (Hiebert, 2009; Gambrell, 2015). Teachers can guide, motivate, and support students and be exemplary with their attitudes and behaviors towards reading, encouraging students to read and directing them to books that are appropriate to their level and following publications (Baccus, 2004; Bozpolat, 2010; Myette, 2006).

Reading is a cognitive activity (Karadağ, 2014). A successful reading process occurs when the reader uses metacognitive reading strategies (MRS) before, during and after reading the text (Mokhtari & Reichard, 2002). Accordingly, it is thought that one of the factors playing a role in the quality of reading action is the ability to use MRS. Examination of the literature reveals that MRS include actions such as highlighting, underlining, circling, writing key words, sentences, or paragraphs, determining the outline and creating a diagram, associating with prior information, imagining, visualizing, questioning and self-examining, reviewing, slow reading, and rereading selected texts (Nist & Holschuh, 2000; Taraban, Rynearson, & Kerr, 2000; Wade, Trathen, & Schraw, 1990; Presley et al, 1992; Paris, Cross, & Lipson, 1984; Simpson, Stahl, & Francis, 2004; Simpson, & Nist, 2000; Yıldız, 2013; Yılmaz, 2012). The use of reading strategies has a positive role in academic success (Baydık, 2011; Çöğmen, 2008). When reading action is evaluated from this point of view, it is understood that the teacher responsible for teaching reading skills is also responsible for teaching appropriate reading strategies to the student (Baydık, 2011). In teaching MRS, the teacher is expected to be a model, practice, give feedback, and reinforce correct responses (Antoniou and Souvignier, 2007). Accordingly, it is thought that the teacher should actively use metacognitive reading strategies.

In line with the information obtained from the literature on RH and MRS, it is understood that individuals with developed RH are successful readers and successful readers use various strategies to increase the quality of reading action. As stated above, it is seen that early childhood periods are critical in terms of gaining RH and skills. In the light of this information, it is considered that the quality of reading activities of prospective teachers who will train the next generations is important. This is because people with RH contribute not only to their own personal development but also to social development (Philip, 2005). Accordingly, it is believed that obtaining information about prospective teachers' RH and their use of MRS will provide important information about the social sustainability of reading. When analyzing the literature, it is found that there are many studies about prospective teachers' RH in our country (Batur, Guelveren, & Bek, 2010; Bozpolat, 2010; Guer, 2014; Kuş and Türkyılmaz, 2010; Özbay, Bağcı, & Uyar, 2008; Saracaloğlu, Karasakaloğlu, & Aslantuerk, 2010; Yalman, Ozkan, & Kutluca, 2013; Yılmaz, 2006; Yılmaz & Benli, 2010). In addition, there are some studies about prospective teachers' use of reading strategies (Çeçen, 2011; Dilci & Babacan, 2011; Edizer, 2015; Karasakaloğlu, 2012; Karasakaloğlu, Saracaloğlu, & Özelçi, 2012; Topuzkanamış, 2010). However, it is understood that a few studies focusing on the relationship between prospective teachers' MRS and RH (Çetinkaya-Edizer, 2015; Kuş & Türkyılmaz, 2010). This limited number of studies provides important information about the relationship between prospective teachers' RH and MHR. When the studies are examined closely, it is seen that Çetinkaya-Edizer (2015) is working with Turkish prospective teachers and Kuş and Türkyılmaz (2010) are working with Social Science and Turkish prospective teachers. When the Turkish Teacher Special Field Competencies (2017) is examined, it is understood that Turkish teachers have important duties in developing their comprehension and expression skills and using the language correctly and effectively. However, it is the Preschool teacher's responsibility (Pre-School Education Program, 2013) to provide students with phonetic awareness, reading awareness, and writing awareness in early childhood. It is the responsibility of the Primary teacher to gain the ability to first read and write (Turkish Lesson Teaching Program, 2018). In this regard, it is understood that there are important duties for teachers working at the Basic Education level and prospective teachers studying at the Department of Basic Education. As stated

above, teachers have an important role on reading skills. Therefore, it is important for prospective teachers responsible for raising future generations to learn about their RH and their use of MRS. In this regard, this study aimed to investigate the relationship between the pre-school teachers' levels of using MRS and their RH. Accordingly, the sub-problems of the research as follows:

- What is the level of prospective teachers' attitudes towards reading habit?
- What is the level of prospective teachers' metacognitive reading strategies?
- Do the attitudes of prospective teachers towards reading books change according to their gender, their department, grade, parental education status?
- Do the prospective teachers' metacognitive reading strategies change according to their gender, department, grade, parental education status?
- Is there a significant relationship between prospective teachers' reading habit attitude scores and metacognitive reading strategies scores?

2. Method

In this chapter, information on the research model, sampling, data collection tools, and data analysis and interpretation are presented.

2.1. Research Model

In this study it is focused on investigate relationship between the prospective teachers' RH and MRS. Due to this the study is designed in correlation model.

2.2. Sampling

It is used a simple random sampling method. Demographic information about prospective teachers is presented in Table 1.

Table 1. *Demographic Information*

		Frequency	Percentage
Department	Primary Education	255	50.8
	Pre-school Education	249	49.2
	Missing Value	2	0.4
	Total	506	100.00
Gender	Female	402	50.4
	Male	102	49.2
	Missing Value	2	0.4
	Total	506	100.00
Grade	1	35	6.3
	2	163	32.3
	3	177	35.00
	4	129	26.5
	Missing Value	2	0.4
	Total	506	100.00
Education Level of Mother	Primary School	267	54.00
	Secondary School	94	19.00
	High School	101	20.4
	College	32	6.3
	Missing Value	12	2.4
	Total	506	100
Education Level of Father	Primary School	186	36.8
	Secondary School	97	19.2
	High School	142	28.1
	College	74	14.6
	Missing Value	7	1.4
	Total	506	100.00

As seen in Table 1, 506 prospective teachers, 402 women and 102 men, participated in the research. 255 prospective teachers study in Primary Education and 249 in Preschool Education. 35 first grade, 163 second grade, 177 third grade and 129 fourth grade prospective teachers were taken place in the sampling.

2.3. Data Collection Tools

Book reading habit attitude scale. The Book Reading Habit Attitude Scale, developed by Gömleksiz (2004), is a single factor five-point Likert scale with 30 items. Factor analysis was performed to determine the validity of the scale containing 22 positive and 9 negative items. KMO value was calculated as 0.83, and Barlett test was calculated as 2202.20. As a result of the reliability analysis, the Cronbach Alpha coefficient of the scale was determined as 0.88.

Metacognitive reading strategies scale. The scale developed by Taraban, Kerr and Rynearson (2004) was adapted to Turkish by the Çöğmen (2008). It measures the metacognitive strategies used by university students at reading texts concerning their lessons and studying lessons. The two-dimensional scale consists of 22 items. As a result of the construct validity study of the scale translated into Turkish by two experts, the KMO value was significant with the result of the 0.80 Barlett test. According to the reliability analysis results; The Cronbach Alpha reliability coefficient of the analytical strategies sub-dimension, the first factor of the scale, was 0.78, the Cronbach Alpha reliability coefficient of the second factor of the scale, and the Cronbach Alpha reliability coefficient of the second factor of the scale Alpha reliability coefficient of the scale was 0.81.

3. Results

According to first research problem, Table 2 presents the means and standard deviations of prospective teachers' attitudes toward RH.

Table 2. *Prospective Teachers' Attitudes Toward Reading Habits*

	N	Min	Max	X	Ss
Book Reading Habit Attitude	506	1.17	4.83	3.16	0.29

It is seen that in Table 2, the prospective teachers' attitudes towards the RH are at a medium level (X = 3.16; ss = 0.29). Considering that the highest score that can be obtained from the scale is 5, it is seen that this value is moderate.

Table 3. *Prospective Teachers' Metacognitive Reading Strategies*

	N	Min	Max	X	Ss
Metacognitive Reading Strategies	506	1.27	5.00	3.82	0.53

The analysis of Table 3 shows that the prospective teachers' MRS are at an intermediate level (X = 3.82; ss = 0.53). Since the highest value that can be obtained on the scale is 5, this value shows that the prospective teachers have an intermediate cognitive reading strategy.

The third sub-problem of the study is: "Do prospective teachers' attitudes toward reading books change according to gender, subject area, grade level, mother's educational level, and father's educational level?" It was formulated as follows (Table 4).

Table 4. *Kolmogorov Smirnov Test Value for Prospective Teachers' Scores From Attitude Scale Regarding Reading Books*

Scale	N	Stat	Sig
Book Reading Habit Attitude Scale	506	0,108	0,000

When Table 4 is analyzed, it is seen that the prospective teachers' RH attitude scale does not fit the normality distribution. Therefore, the use of non-parametric tests, Mann Whitney U and Kruskal Wallis tests, was considered appropriate for the solution of the third sub-problem of the research.

a. Do the attitudes of prospective teachers towards reading habit differ according to their gender?

Table 5. *Prospective Teachers' Attitudes to Reading Books by Gender*

	Gender	N	Mean of Rank	Sum of Rank	U	p
Book Reading Habit Attitude	Female	401	250.96	100634.00	20033.00	0.75
	Male	102	256.10	26122.00		

As seen in Table 5 that prospective teachers' RH attitudes (U = 20033.00, p <0.05) did not differ in terms of their gender.

b. Do the attitudes of preservice teachers towards RH differ according to the department they are studying?

Table 6. *Prospective Teachers' Attitudes to Reading Books According to Department*

	Department	N	Mean of Rank	Sum of Rank	U	p
Book Reading Habit Attitude	Primary Education	254	251.80	63957.50	31572.50	0.97
	Preschool Education	242	252.20	62798.50		

As seen in Table 6, it was seen that prospective teachers' RH attitudes (U = 31572.50, p <0.05) did not differ in terms of the department.

c. Do the attitudes of prospective teachers towards reading habit differ according to their grade?

Table 7. *Prospective Teachers' Habits of Reading Books by Grade Level*

	Grade	N	Sum of Rank	sd	x^2	p
Book Reading Habit Attitude	1	35	269.34	3	2.05	0.56
	2	163	256.51			
	3	177	240.14			
	4	128	257.92			

When Table 7 is analyzed, it was seen that prospective teachers' RH attitudes do not differ in terms of grade levels [x^2 (3) = 0.56, p <0.05].

d. Do the attitudes of preservice teachers towards RH differ according to the level of mother education?

Table 8. *Prospective Teachers' Attitudes to Reading Books by Mother's Education Level*

	MEL	N	Sum of Rank	sd	x^2	p
Book Reading Habit Attitude	Primary School	267	263.47	3	15.19	0.02
	Secondary School	94	257.96			
	High School	101	207.32			
	College	31	201.19			

It was determined that prospective teachers' RH attitudes differ in terms of mother's education level [x^2 (3) = 0.02, p <0.05]. To determine the significant difference observed between the groups depending on the significant differences between the groups, Mann Whitney U test was applied over the binary combinations of the groups. Table 9 shows the Mann Whitney U test results done over the binary combinations of the groups.

Table 9 shows that there is a significant difference between prospective teachers whose mother attended primary school and prospective teachers whose mother attended secondary school or university. There is also a significant difference between prospective teachers whose mother attended secondary school and prospective teachers whose mother attended grammar school in favour of those whose mother attended secondary school.

Table 9. *Prospective Teachers' Habits of Reading Books by Mother's Education Level*

Mother Education Level	N	Mean of Rank	Sum of Rank	U	p	Mother Education Level	N	Mean of Rank	Sum of Rank	U	p
Primary School	267	181.88	48561.00	12315.00	0.78	Secondary School	94	108.06	10158.00	3801.00	0.16*
Secondary School	94	178.51	16.78			High School	101	88.63	8952.00		
Primary School	267	196.00	52331.50	10413.50	0.00*	Secondary School	94	66.38	6240.00	1139.000	0.69
High School	101	154.10	15564.50			College	31	52.74	1635.00		
Primary School	267	153.60	41010.00	3045.00	0.16*	High School	101	66.58	6725.00	1557.00	0.96
College	31	114.23	3541.00			College	31	66.23	2053.00		

e. Do the attitudes of prospective teachers towards RH differ according to the level of father education?

Table 10. *Prospective Teachers' Attitudes to Reading Books by Father's Education Level*

	FEL	N	Sıra Ortalaması	sd	x^2	p
Book Reading Habit Attitude	Primary School	186	275.22	3	10.38	0.01
	Secondary School	97	237.95			
	High School	142	235.10			
	College	72	223.56			

It was seen that prospective teachers' RH attitudes [X2 (3) = 0.01, p <0.05] differ in terms of mother's education level. Mann Whitney U test was applied over the binary combinations of the groups to determine the significant difference observed between the groups. Table 11 shows results done over the binary combinations of the groups.

Table 11. *Prospective Teachers' Habits of Reading Books by Father's Education Level*

Father Education Level	N	Mean of Rank	Sum of Rank	U	p	Father Education Level	N	Mean of Rank	Sum of Rank	U	p
Primary School	186	148.85	27686.50	7746.50	0.51	Secondary School	97	120.30	11669.50	6857.00	0.95
Secondary School	97	128.86	12499.50			High School	142	119.79	17010.50		
Primary School	186	176.19	32771.00	11032.00	0.01*	Secondary School	97	86.78	8418.00	3319.00	0.58
High School	142	149.19	21185.00			College	72	82.60	5947.00		
Primary School	186	137.18	25516.00	5267.00	0.00*	High School	142	109.12	15495.00	4882.00	0.59
College	72	109.65	7895.00			College	72	104.31	7510.00		

The fourth sub-problem of the study is, "Does the MRS of prospective teachers change according to their gender, the department they are studying, their grade, the education level of their mothers and the education level of their fathers?" It was expressed as. The results of the Kolmogorov Smirnov test are presented in Table 12.

Table 12. *Kolmogorov Smirnov Test Value for Primary School Teachers' Scores from the Scale of Metacognitive Reading Strategies*

Scale	N	Stat	Sig
Scale of Metacognitive Reading Strategies	506	0.44	0.019

It is seen that the prospective teachers' scores of the MRS scale is not normal. Therefore, non-parametric tests, Mann Whitney-U test and Kruskal Wallis tests were found suitable for solving the third sub-problem of the research.

f. Do prospective teachers' metacognitive reading strategies differ according to their gender?

Table 13. *Mann Whitney U Test Results Regarding the Gender of Prospective Teachers' Cognitive Reading Strategies Scale*

	Gender	N	Mean of Rank	Sum of Rank	U	p
Metacognitive Reading Strategies	Female	254	251.80	63957.50	31572.50	0.97
	Male	242	252.20	62798.50		

Examination of Table 13 shows that prospective teachers' MRS differed significantly by gender (U = 17875.50, p 0.05). When the mean rank scores were examined, it was found that this difference was in favor of female prospective teachers.

g. Do prospective teachers' MRS differ according to the department they are studying?

Table 14. *Prospective Teachers' Cognitive Reading Strategies Scale Mann Whitney U Test Results*

	Department	N	Mean of Rank	Sum of Rank	U	p
Metacognitive Reading Strategies	Primary Education	255	255.33	65109.50	31025.50	0.65
	Preschool Education	249	249.60	62150.50		

The analysis of Table 14 shows that prospective teachers' MRS do not differ significantly according to the subjects studied (U = 31025.50, p 0.05).

h. Do prospective teachers' metacognitive reading strategies differ according to the grade level they are studying?

Table 15. *Kruskal Wallis Results Related to Grade Level of Prospective Teachers' Metacognitive Reading Strategies Scale*

	Grade	N	Sum of Ranks	sd	x^2	p
Metacognitive Reading Strategies	1	35	247.40	3	0.67	0.87
	2	163	256.59			
	3	177	255.77			
	4	129	244.42			

It is seen that prospective teachers' MRS do not differ significantly from grade levels [x^2 (3) = 0.87, p <0.05]. In other words, the MRS of prospective teachers do not change significantly depending on their grade levels.

i. Do prospective teachers' metacognitive reading strategies differ according to their mother's education levels?

Table 16. *Kruskal Wallis Results Regarding Mother Education Level of Prospective Teachers' Metacognitive Reading Strategies Scale*

	MEL	N	Sum of Ranks	sd	x^2	p
Metacognitive Reading Strategies	Primary School	267	256.16	3	2.74	0.43
	Secondary School	94	228.76			
	High School	101	242.13			
	College	32	247.28			

It is seen that prospective teachers' MRS do not differ significantly according to their mother's education levels [x^2 (3) = 0.43, p <0.05]. In other words, the MRS of prospective teachers do not change significantly depending on the level of maternal education.

j. Do prospective teachers' MRS differ according to their father's education levels?

Table 17. *Prospective Teachers' Metacognitive Reading Strategies Scale Related to Father's Education Level Kruskal Wallis Results*

	FEL	N	Sum of Ranks	sd	x^2	p
Metacognitive Reading Strategies	Primary School	186	266.97	3	6.24	0.10
	Secondary School	97	231.16			
	High School	142	234.84			
	College	74	261.12			

It is seen that prospective teachers' use of MRS do not differ significantly from their father's education levels [x^2 (3) = 0.10, p <0.05]. In other words, the level of prospective teachers' use of MRS does not change significantly depending on their level of father education.

Table 18. *The Relationship Between Prospective Teachers' Habits of Reading and Metacognitive Reading Strategies*

	X	ss	r	p
Book Reading Habit Attitude	3.16	0.53	0.31*	0.00
Metacognitive Reading Strategies	3.82	0.29		

It is seen that there is a moderately positive significant relationship between prospective teachers' RH attitudes and their use of MRS (r = 0.31; p = 0.00).

4. Conclusion, Discussion and Suggestions

This study investigated the relationship between pre-school and primary school prospective teachers' level of MRS and RH. The RH of the prospective teachers and the use of MRS were moderate. The RH of prospective teachers (Kurgan ve Çekerol, 2008; Kuş & Türkyılmaz, 2010; Yılmaz, Köse & Korkut, 2009) and their use of MRS (Ateş, 2003; Çeçen & Alver, 2011; Dilci & Babacan, 2011; Kuş and Turkyilmaz, 2010; Topuzkanamış, 2009) are examined, it becomes clear that there are studies that both support the findings of this research and reveal findings to the contrary. For example; in the study of Yılmaz, Köse and Korkut (2009), which examines the RH of university students, it is seen that students have poor RH. Similarly, in a study that examined the RH of Turkish and Social Studies prospective teachers, the study frequency of Turkish prospective teachers reading books was higher than that of Social Studies teachers. Still, the study showed that the prevalence of prospective teachers was low (Kuş & Türkyılmaz, 2010). In another study conducted with prospective primary teachers, reading interests seem to be moderate (Saracaloğlu, Yenice, & Karasakaloğlu, 2009). Unlike these studies, Kurgan and Çekerol (2008) concluded that the students of the child development department have a high RH. It is seen from the above findings that the attitudes of prospective teachers towards RH are moderately and weakly concentrated. This situation can be interpreted as prospective teachers do not make reading a habit. In addition, when examining studies on metacognitive strategy, different results are seen, as in RH. For example, in the study by Kuş and Türkyılmaz (2010), it is found that prospective teachers use MRS only to a small

extent. Moreover, Ateş (2013), who investigates university students' awareness of MRS, shows that awareness of MRS is at an intermediate level. Topuzkanamış (2009), focusing on the use of metacognitive strategies by prospective teachers, also shows that the use of the strategy is moderate. According to Topuzkanamış (2009), prospective Turkish teachers use the most strategies while prospective elementary teachers use the strategy below the mean. In contrast to these results, Dilci and Babacan (2011) who work with prospective elementary teachers and Çeçen and Alver (2011) who work with prospective Turkish teachers are believed to use MRS frequently. It can be said that this is due to the different characteristics of the working groups. Moreover, it is known that children frequently use reading strategies (Kuruyer & Özsoy, 2016) that adults use less (Wood, Motz, & Willoughby, 1998). Accordingly, it is reasonable to assume that prospective teachers use age-related metacognitive strategies less. When the information from the literature is reviewed along with the findings obtained in this study, it becomes clear that there are many factors that influence the use of RH and metacognitive strategies. According to Guer (2014), who works with prospective teachers from different teacher education programs, prospective teachers are among the less likely to read. Preservice teachers explain this situation for reasons such as housework, intensity of work, exams, book prices, computer use and watching television, the effect of friendship environment and tablet / phone / television use (Kuş & Türkyılmaz, 2010; Saracaloğlu, Yenice, & Karasakaloğlu, 2009; Yalman, Özkan & Kutluca, 2013). Therefore, it is understandable that the results of these studies with different sample groups cannot be matched. However, it is recommended that this situation be taken into account in order to increase the qualification of teachers. It is believed that prospective teachers who will be the teachers of the future should be role models with their RH for the role they will play in shaping the society. Therefore, it is recommended that provisions be made to eliminate the situations that prevent the prospective teachers from becoming better readers. One of the variables examined within the scope of the study is gender. In particular, it is thought that the gender variable comes to the fore in studies related to reading. In this study, it is understood that there is no significant difference in the RH of prospective teachers in terms of gender. At the same time, there is a significant difference in favor of prospective female teachers in the levels of prospective teachers' use of metacognitive strategy. In other words, although the RH of female and male prospective teachers are similar, prospective female teachers use metacognitive strategies more than prospective male teachers. It is seen that the findings regarding both the RH and the use of metacognitive strategy are compatible with the literature. For example, in Bozpolat's (2010) study, there is a significant difference in favor of female teachers in the opinions of prospective teachers about on reading books. Similarly, in the study of Aydın-Yılmaz (2006), which examines the RH of prospective primary teachers, it is understood that RH does not change according to gender. In addition, Odabaş, Odabaş and Polat (2008), who examined the RH of university students, revealed that women read more books. Still, there is no difference between men and women at the habit level. In addition, in studies on the use of MRS, it is seen that the findings of this study are supported by some studies but not supported by others. For example, Erdem (2012), who examined the MRS of Turkish Language and Literature prospective teachers, revealed no difference between the female and male prospective teachers. Similarly, in Çeçen and Alver (2011), who work with prospective Turkish teachers, it states that gender does not differ in the use of metacognitive strategies of prospective teachers. The findings of the studies described above contradict this study. On the other hand, it is clear that there is a significant difference in gender in the studies of Ateş (2013), which investigates the MRS of university students, and Topuzkanamış (2009) and Kuş and Türkyılmaz (2010), which investigate the MRS of prospective teachers. These findings support the results of this study. Although there is no significant difference between genders in terms of RH, it is believed that the RH of prospective female teachers are more positive than those of males. However, it is found that females use more strategies than males in applying MRS. Arslan (2013), who studied the gender variable in adult reading studies, found that this situation is related to the fact that women spend more time reading books because they spend more time at home than men. Accordingly, this study assumes that female teachers' attitudes towards RH and MRS are more positive than male teachers' attitudes, which is related to gender roles. Teachers' RH and their level of use of MRS do not differ significantly by subject area. In other words, the RH and use of MRS of prospective preschool teachers and elementary school teachers are similar. Although the structure of the Preschool Education and Primary Education courses differ from each other, it is believed that the RH and MRS of the two groups are similar to the profile of students who prefer education faculty. Examination of the literature reveals that the thinking styles of prospective preschool and elementary teachers are similar in studies examining the profiles of prospective teachers. The style of thinking provides important information about

the individual's perspective. For example, there are many studies that show that there is a relationship between prospective teachers' thinking styles and academic achievement (Akbıyık & Seferoğlu, 2002; Çubukçu, 2004; Koray, Koeksal, Oezdemir, & Presley, 2007; Oezerbaş, 2011). Thinking is the process of creating symbols and meanings in the brain to define the external world (Çubukçu, 2004). Reading is also a cognitive activity that is performed to make sense of various symbols. Therefore, this finding can be interpreted as suggesting that prospective teachers are similar in their use of RH and MRS as well as thinking styles. In addition, studies conducted with prospective teachers found that the reading profiles of preschool and elementary school teachers were similar in terms of reading behaviors (Bozpolat, 2010). Based on this information, it is predicted that the reading profiles of preschool teachers and elementary teachers correspond to the similarities in their thinking styles. The level of RH and the use of MRS do not change according to the department in which the prospective teachers study, nor do they change according to the grade level of the prospective teachers in this study. In other words, the RH and MRS of the prospective teachers do not differ significantly by grade level. This finding shows a result that is contrary to the studies in the literature. For example, Odabaş, Odabaş, and Polat (2008) found significant differences in prospective teachers' RH in favor of first-grade prospective teachers. Çeçen and Alver (2011) found significant differences in studies on the use of metacognitive strategies in favor of prospective teachers studying in the first grade. Erdem (2012) concluded that there was a significant difference in the use of metacognitive strategies in favor of second and third year students. However, it should be taken into consideration that these studies were conducted with college students from faculties such as Art and Science, Turkish Education and Turkish Language and Literature Education students from the Faculty of Education. The fact that the results of the studies described above do not support this study is probably due to different characteristics of the sample groups. Although there is no significant difference in terms of grade level in this study, it can be observed that the average of RH and MRS decreases as the grade level increases. There may be many reasons for this. For example, it is known that RH decreases with age and that simpler than metacognitive strategies are preferred at older ages (Kuruyer & Oezsoy, 2016; Wood, Motz, & Willoughby, 1998). Although this study did not measure the age variable, it is hypothesized that the RH weakens and the use of metacognitive strategies decreases with age as grade level progresses in general. Moreover, in the study of literature, the pressure created by the exam (KPSS) is also one of the reasons why prospective teachers do not read (Kuş & Türkyılmaz, 2010; Saracaloğlu, Yenice, & Karasakaloğlu, 2009; Yalman, Oezkan & Kutluca, 2013). It can be inferred that prospective teachers spend less time on activities related to reading and make reading a priority when the anxiety of being employed in upper grades increases. Another variable examined in the research is the educational level of the parents. The results show that the educational level of parents causes a significant difference in RH. In addition to school activities, reading activities also play an important role in reading achievement (Leppaenen, Aunola, & Nurmi, 2005). For this reason, it is considered important to be a role model for children in terms of reading books outside of school. Research indicates that families play an important role in being a role model in RH (Yavuzer, 2003; Yılmaz, 2011; Yılmaz, Koese & Korkut, 2009). In this study, it is assumed that parents' educational level plays an important role in prospective teachers' RH. However, the study results in the literature do not support the findings obtained in this study. For example, Kurulgan and Çekerol (2008), in their study of college students' RH, found that there was no significant difference in RH depending on parents' educational level. Similarly, in the study of Batur, Gülveren and Bek (2010), which investigates the RH of prospective teachers, there is no significant difference according to the educational level of parents. Similarly, Bozpolat (2008) who investigated the RH of primary school teachers and prospective Turkish teachers concluded that there was no significant difference between RH and parents' educational level. Although the findings on parents' educational level are not confirmed in the literature, researchers in this study point out the role of parents' RH (Aslanturk, 2008; Aydın-Yılmaz, 2006). In particular, it is observed that children from families with RH have high levels of RH (Aydın-Yılmaz, 2006). Therefore, in order to obtain more accurate information about prospective teachers' RH and the role of families, it is proposed to consider prospective teachers' RH, family RH, and parents' educational status together. The results show that the use of metacognitive strategies by prospective teachers does not significantly depend on the educational status of parents. Considering the literature, it is understandable that the use of metacognitive strategies as a function of parental education level was not investigated. However, considering the impact of parents on children, it is assumed that parents play a role in the use of metacognitive reading strategies. Accordingly, it is recommended that parents' educational level in using metacognitive strategies be investigated, as well as their use of metacognitive strategies and whether

this situation is a role model for their children. In this way, comprehensive information on the role of the family in the use of metacognitive strategies will be obtained. Finally, the relationship between the degree of use of MRS of prospective teachers studying in the department Basic Education and the degree of RH was investigated. The results show that there is a moderately significant relationship between prospective teachers' use of MRS and the level of RH. Since the relationship between MRS and RH was investigated for the first time in this study, it is assumed that previous studies on reading are not based on this issue. However, in Kuş and Turkyilmaz's (2010) study, it is found that there is a moderate relationship between Turkish language and social studies prospective teachers' reading frequency and their use of metacognitive strategies. Similarly, in the study of Karasakaloğlu, Saracaloğlu, and Yılmaz-Özelçi (2012), who investigated the reading strategies, critical thinking attitudes, and metacognitive skills of prospective Turkish teachers, it is found that prospective teachers who use MRS also read books frequently. In contrast to these studies, Susar-Kırmızı (2011) found that there was a weak relationship between the amount of time spent reading daily, the use of strategies, the number of books read, and the use of strategies. Although the frequency of reading, time spent on reading and number of books read, and RH are different situations, the findings obtained should support this study. In conclusion, as the RH increases, the prospective teachers use more metacognitive strategies or the prospective teachers use more metacognitive reading strategies. However, the most striking point in all these studies is the level of using reading strategies. According to Erdem (2012), prospective teachers do not support the use of pedagogical reading strategies in a qualified manner. Considering the fact that reading strategies are related to metacognitive skills, it is recommended that prospective preschool and elementary teachers who realize the beginning of reading activities should support the use of metacognitive reading strategies. In this way, it is believed that distant goals in the learning-teaching process can be better achieved. In addition, it is assumed that reading is an important factor for academic success as it precedes all academic studies. Accordingly, it is proposed that the effectiveness of programs that support the use of MRS be examined in future studies of reading. In this way, it is predicted that the elements that enhance the quality of reading instruction will be more comprehensively determined.

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Leadership Characteristics of Female School Principals According to Female Teachers

Pınar MERT[1]

[1]*İstanbul Sabahattin Zaim University, Faculty of Education, İstanbul, Turkey* *0000-0003-3633-7556*

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ABSTRACT

Although the number of female teachers in schools is higher, this is not evident when looking at leadership levels. Various studies have examined this situation. In this study, the perspectives of female teachers working in private schools who are gradually raising their educational levels are discussed in depth about female head teachers. For this purpose, semi-structured interviews were conducted with 37 female teachers working in private schools in the Anatolian part of Istanbul. The data were analysed using content analysis, one of the qualitative analysis methods. As a result of the research, three main themes were found among the characteristics of female leaders, the competencies of female leaders, and the impact on the work environment. Under the theme of characteristics of female leaders, there are five categories: being selfish, forming problematic working relationships, being detail-obsessed, being jealous, acting emotionally; under the theme of competencies of female leaders: they lead well, their leadership skills are weak, they cannot be fair and impartial, they are not solution-oriented. The theme of the impact of female leaders on the work environment is a chaotic environment; communication is important, supportive environment.

Keywords:
Female teachers, Female managers, , Career Barriers, Characteristics of Female Managers

1. Introduction

Despite national efforts to equalize the proportion of women in senior positions, there are still prejudices about the perception of female leaders in educational institutions. Grogan and Shakeshaft (2011) also point out that many types of research encounter limited audiences. Female leaders are also sparsely represented in schools, especially at the secondary level (Blackmore, 2002; Coleman, 2000; Lee et al., 1993; Moorosi, 2010; Pont et al., 2008). As students age, the percentage of female leaders in school administration decreases (Coleman, 2002). In addition, female principals have the least longevity in their positions compared to male principals at all school levels (Fuller & Young, 2009). Coleman (2000) and Lee et al. (1993), especially male teachers, are uncomfortable with female leadership, and Lee et al. (1993) found that according to the gender of administrators, not only men but also women have prejudices. Moreover, women tend to be recruited for leadership positions and promoted at relatively older ages, although they have more experience and education than men (Grogan and Shakeshaft 2011; Roser et al., 2009). Along with all these difficulties, the idea that women have problematic relationships in the workplace has spread throughout management literature and formed the basis of research into the queen bee syndrome (Staines et al., 1974). A similar concept was not created for the male employees, as their conflicts and rivalries, identical to the queen bee syndrome, are considered normal. Female leaders are often criticized for subordinates' prejudices (Bratton et al., 2004; Grogan 2014). Gender stereotyping occurs implicitly; while individuals succumb to stereotypes during latent measures, they report non-stereotypes (Latu et al., 2011; Rudman & Glick, 2001). For example, the ideal woman has concern for the welfare of others and displays behaviors aimed at being kind, cooperative, helpful,

[1] Corresponding author's address: İstanbul Sabahatin Zaim University, Faculty of Education, İstanbul, Turkey
e-mail: pinar.mert@izu.edu.tr
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sympathetic, gentle, and nurturing. Meanwhile, the ideal man is self-interested, competitive, independent, and dominant (Eagly & Karau, 2002; Prentice & Carranza, 2002).

However, despite all these prejudices, studies show that female leaders have more instructional leadership than male leaders (Hallinger et al., 2016; Shaked et al.,, 2018). Also, female leaders have More transformational leadership than male leaders (Barbuto et al., 2007; Hyde. 2005). According to Eagly and her colleagues (1992), female principals adopted more participatory, democratic, task-focused leadership styles than their male counterparts. Besides, women develop emotional relationships with others and tend to be much more empathetic than men (Shaked et al., 2018). On the other hand, when it comes to school leadership, there is a general belief that equity issues for women are no longer a problem (Coleman 2005, 16). This may be because, as Lieberman (1988) notes, most research in educational administration is conducted from the male perspective.Indeed, in the twenty-first century, women are still underrepresented in educational leadership positions, and their small share of leadership positions in schools has not changed significantly in recent decades (Kruger, 2008; Marczynski and Gates 2013).As women began to climb the ladder in their organizations, balancing their family life with leadership roles has become a problem (Naidoo and Perumal, 2014). One of the concepts that express all these career barriers for women is the glass ceiling syndrome. According to Wirth (2001), invisible obstacles fueled by prejudices that prevent women from reaching senior management positions are called glass ceiling syndrome. Women who manage to break the glass ceiling face many challenges in leadership and develop a range of qualifications and skills to deal with these challenges (Smith, 2008).

Having a small number of female managers in the education sector is a global problem, and this problem is also present in Turkey. The rate of female school principals in Turkey is 5.3 (Ministry of National Education, 2020), and the World Economic Forum's 2020 Global Gender Gap Report ranked Turkey 130th out of 153 countries (World Economic Forum, 2020). Researchers in Turkey put forward various reasons for the lack of representation of female teachers in senior positions. Can (2008) found that the patriarchal administrative structure and traditional structures in Turkey have not changed in favor of female administrators. Bingol et al. (2011), Tanrisevdi (2016), Orbay (2018) revealed that female teachers could not participate in social networks at schools, and this situation negatively affects their careers. On the other hand, Izgar (2001), Mert, and Levent (2020) stated that women teachers have difficulty allocating time to their jobs due to family responsibilities and burdens.

While Coleman (2003) found that school leadership is identified with men, Smith (2011) found that there are negative biases about women's leadership. Even when female leaders are successful, they may be at risk of negative evaluation.These prejudices are sometimes created by their colleagues and sometimes by male or female employees. This study offers the opportunity to portray female school principals through the eyes of female teachers. The reason for applying the research on private school teachers is that private schools gain more importance in the Turkish education system due to the spread of foreign language education, technological developments, artistic and sports activities, according to parents' opinions of parents (Kulaksızoğlu et al., 2013). In addition, Mert and Levent (2020) revealed in their research that female teachers working in private schools have more motivation to be administrators than female teachers working in public schools. Since the number of private schools in Istanbul is high, this study aimed to reveal teachers' opinions working in private schools in Istanbul. Therefore, the leadership characteristics of female school principals were analyzed from the point of view of female teachers working in private schools. This study is significant in that it provides a detailed perspective by looking at the characteristics of female administrators from the perspective of female teachers.

2. Methodology

In the method part of the study, explanations were made under the headings of the research model, study group, data collection, and analysis.

2.1. Research Model

The qualitative research method was used in this study. Qualitative research is an interrogative, interpretive method that strives to understand the shape of the problem in its natural setting (Klenke, 2016).In addition, the phenomenology model was used, as the situation discussed was to reveal the existing thoughts of female

teachers working in private schools about female school principals. Phenomenology focuses on events and experiences that we are aware of but do not have in-depth knowledge of (Yıldırım & Şimşek, 2013).

2.2 Study group

This study used the purposeful sampling method because the most suitable participants and experienced ones were sought for the study (Neuman, 2014). Also, criterion sampling, one of the purposeful sampling methods, was used (Patton, 2005). In the criterion sampling method, the criteria are set by the researcher before the study for the purpose of the research (Yıldırım & Şimşek, 2013). In this direction, care was taken to select teachers with seniority of five years or more.. The data were collected by interview technique from female teachers working in private schools on the Anatolian side of Istanbul in the 2020-2021 academic year. The interview technique determines how individuals make sense of and evaluate their encounters (Greasley & Ashworth, 2007). Descriptive information for the study group is given in Table 1.

Table 1. *Demographics of the participants*

	Age	School Level	Seniority	Marital status	Managerial experience	The gender of the principal in the school where you work	The gender of vice-principal in the school where you work
P1	30	High School	8	Married	No	Man	Woman
P2	32	High School	8	Married	No	Man	Woman
P3	45	High School	20	Single	No	Man	Man and Woman
P4	27	Middle School	5	Single	No	Man	Woman
P5	32	Primary School	5	Single	No	Man	Woman
P6	30	Middle School	7	Married	No	Man	Man
P7	30	Middle School	6	Married	2 years	Man	Woman
P8	30	Middle School	6	Single	No	Man	Woman
P9	38	High School	16	Married	No	Man	Man and Woman
P10	36	Primary School	13	Single	No	Man	Man
P11	31	Primary School	5	Married	No	Man	Woman
P12	28	Primary School	5	Married	No	Woman	Man
P13	45	Primary School	8	Married	1 year	Woman	Woman
P14	50	Primary School	19	Single	15 years	Woman	Woman
P15	29	Middle School	6	Single	No	Man	Woman
P16	32	Middle School	10	Single	No	Man	Man
P17	26	High School	5	Married	No	Man	Man
P18	26	Pre-school	5	Single	No	Woman	Man and Woman
P19	39	Middle School	7	Single	No	Man	Man and Woman
P20	35	High School	10	Married	No	Woman	Man
P21	27	High School	5	Married	No	Man	Man and Woman
P22	28	High School	5	Married	No	Man	Man and Woman
P23	29	High School	5	Single	No	Man	Man
P24	29	Middle School	8	Single	No	Man	Man
P25	27	High School	5	Single	No	Man	Man
P26	31	High School	11	Married	No	Man	Man
P27	36	High School	5	Married	No	Woman	Man
P28	32	High School	9	Single	No	Man	Man
P29	26	High School	5	Single	No	Man	Man
P30	33	Pre-school	14	Married	2 years	Man	Man
P31	38	Pre-school	10	Single	No	Man	Man
P32	25	High School	5	Married	No	Man	Man
P33	30	Middle School	5	Single	No	Woman	Woman
P34	42	Middle School	15	Single	No	Man	Man
P35	26	Middle School	5	Single	No	Man	Man
P36	29	Middle School	5	Married	No	Man	Man
P37	39	Pre-school	16	Single	No	Man	Man

This study is significant in that it provides a detailed perspective by looking at the characteristics of female administrators from the perspective of female teachers.

2.3 Data Collection

A semi-structured interview form was created by scanning the studies on women's career barriers and the leadership characteristics of female school principals and taking expert opinions. Care was taken to ensure that the questions prepared in the interview form were open-ended. The interviews were held online due to the Covid 19 pandemic measures. The interviews lasted about 45-50 minutes. Participants expressed more than one opinion in some questions.

2.4 Analysis of Data

The data were evaluated by content analysis. In content analysis, data with similar elements are organized and interpreted in a way that the reader can understand under certain concepts and themes (Yıldırım & Şimşek, 2013). This is a kind of coding process (Babbie, 2006). In this research, the raw data from the interviews were first read repeatedly and the codes were identified. Themes were formed from the codes. Credibility and transferability are very important in qualitative research (Erlandson et al., 1993). For this purpose, a brief summary of the participants' statements was made at the end of the interviews and confirmation was obtained regarding the accuracy of their statements.

For this research to be conducted ethically, the identities of the female teachers were kept confidential and codes such as P1, P2. In addition, Lincoln and Guba (1985) suggested strategies in qualitative research used to ensure the validity and reliability of the study by trying to reflect the research process. These strategies are; diversity, expert review, consistency, and external audit. The studies carried out in this context are summarized below.

Diversification: One of the main strategies to increase the reliability of research results is diversification. Yıldırım and Şimşek (2013) state that collecting data from different samples with different methods and thus preventing the mixing of biases or misunderstandings in the results are the basic principles of diversity. In the research, data were collected from different schools in the region to ensure the diversity of the study group.

Expert Review : Involving other experts in the same study. Thus, harmony between experts in the steps of data collection, data analysis and obtaining the results will ensure that the study will be accepted by others (Yıldırım & Şimşek, 2013). In this sense, the research data were coded by two different experts. The research data was obtained from Pınar Mert and Sait Volkan Mert.*Consistency*: All findings are presented without comment to increase the consistency of the research. In addition, the collected data were coded separately by the researcher and an expert, and the consistency/consistency between the coders was calculated by comparing the coding made.

External audit: According to Creswell (2016), information must be made available for audit for research to be approved. For all stages of this study to be ideal for an external audit, the teacher's written and online scenario forms were evaluated in the computer environment. The fact that the data analysis and research reporting was carried out in the computer environment facilitated the storage and verifiability of the data.

3. Findings

Characteristics of Female Managers

There are five categories under the theme of the characteristics of female managers. These are; being egoistic (9 people), establishing problematic work relationships (5 people), being detailer (7 people), being jealous (7 people), acting emotionally (5 people). These are presented in Table 2.

Table 2. *Characteristics of Female Managers, Themes, Categories and Sample Opinions*

1	Categories	Number of Views	Sample Opinions
Characteristics of Female Managers	Being egoistic	9	P.22: Yes, this is crucial. It is not easy to work with female managers. When they involve their ego and emotions, they move away from professionalism. P.33: Women can show weaknesses in terms of management. They have a high ego, I know them, and they have an honest and insensitive attitude. P.4: Female managers have a higher ego. Women who are not justiciable and conscientious should not be managers.
	Establishing problematic work relationships	5	P.27: We can say that in a male-dominated society, women marginalize each other. They display a harsher and authoritarian attitude towards all the people they rule, including their gender. P.8: Female managers develop more problematic work relationships while working with their fellows.
	Being detailer	7	P.2: It is easier to work with male managers because female managers are very detail-oriented. Male managers do not interfere with unnecessary details. P.28: I think women are more detail-oriented. They are better at looking at problems from a different perspective. They are good at analytical intelligence.
	Being jealous	7	P.39: Gossip, quarrels, jealousy, and opinion games take place with more women managers. P.30: Male managers do not have feelings of jealousy, but women have.
	Acting emotionally	5	P.19: I think they will be good stewards as long as they do not act emotionally. But because of their nature, they will act out of their emotions, so women cannot be rulers.. P.36: Female managers view events more emotionally, male managers more realistic. P.12: Most women reflect this to their subordinates because they have difficulty controlling their emotions. This can cause trouble from time to time.

Competencies of Female Managers

There are four categories in the competence theme of female managers. These can be listed as they lead well (7 people), their managerial skills are weak (5 people), they cannot be fair and impartial (7 people), they are not solution-oriented (6 people). These are presented in Table 3.

Table 3. *Competence Theme of Female Managers, Categories and Sample Opinions*

Themes	Categories	Number of Views	Sample Opinions
Compentencies of Female Manager	They lead well	7	P.13: Considering the prejudices and pressures they face, I think their excellent crisis management skills can explain their ability to be so successful. We can say that women are cut out for this job. P.15: They are productive, solution-oriented, and able to look in detail from different angles. As long as they reflect these features correctly, positive results emerge.
	Their managerial skills are weak	5	P.33: I have seen that women are not very skilled in administration, act out of their emotions, and are not very good at justice, law, and understanding. P.23: I think it is difficult for women to be administrators because they tend to magnify and perpetuate problems. They show a harsher and more authoritarian attitude towards all people they govern, including both sexes. P.8: Female managers develop more problematic business relationships while working with their fellows.
	They cannot be fair and impartial	7	P.10: ...but the male manager is often neutral P.33: Men can be more fair, impartial, and understanding. Women may show weakness in terms of management

			P.36: I prefer men to be managers. Since women are evaluating emotionally, they cannot make an impartial observation. P.37: I think they are not open to criticism. Their disadvantages are that they act emotionally, make quick decisions, and cannot be objective.
	They are not solution oriented	6	P.34: Instead of solving problems, acting as if they have solved them and continuing by making their own decisions negatively affects. P.17: Since they manage within the framework of rules, they have difficulties finding solutions in situations where there is a rule gap.

The Effects of Female Managers on the Work Environment

There are three categories under the theme of the effect of female managers on the working environment. These are a chaotic environment (9), communication is important (4), and a supportive environment (6). These are presented in Table 4.

Table 4. *The Effects of Female Managers on the work environment, Categories and Sample Opinions*

Themes	Categories	Number of Views	Sample Opinions
The Effects of Female Managers on the Work Environment	Chaotic Environment	9	P.18: It can lead to one manager undermining the other or causing chaos by taking on more tasks in the team.P.18: It may cause a manager to undermine the other or cause chaos by taking P.33: Chaos, arrogance, and egos become an environment where they fight. It becomes a witchcauldron. A male manager is a must. It becomes a witchcauldron. A male manager is a must.
	Communication is important.	4	P.16: It has professional and robust communication with each other P.20: Their harmony and energies with each other are vital and affect positively. P.23: Female managers strengthen communication
	Supportive environment	6	P.8: Female school principals support you like a friend or a sister. P.14: My female school principal tries to empathize and supports me. It is a very nice approach that he chooses the language he uses and appreciates me. P.24: My female school principal is supportive and appreciative. She encourages and stands behind female teachers more, but I do not support her making this positive discrimination.

4. Discussion, Conclusion, and Recommendations

This study aims to examine the characteristics of female principals according to female teachers working in private schools. The results presented are discussed in this context. The participants see female managers as selfish, weak in establishing business relationships, detail-oriented, jealous, and emotionally motivated leaders. Similarly, Yücedağ and Günbayı (2016), Bayrak and Mohan (2001) stated that women managers experience problems due to their emotional stance. In the study of Can (2008), it was concluded that female managers are emotional in their jobs. At this point, Korkmaz and Moralıoğlu (2010) stated that women are emotional because women's responsibilities are heavy. These responsibilities wear them out, so they have more difficulty controlling their emotions. Again, in the same study, female managers were emotional, sensitive, fragile, and moderate; male managers are expressed as authoritarian, more rational. In addition, male managers can make more aggressive, bold, and fast radical decisions (Çelikten and Yeni, 2004; Korkmaz and Moralıoğlu, 2010).

However, Tok and Yalçın (2017) revealed that female school principals are not emotional. Heller (1982; cited in Arıkan, 1999) also states that there are stereotypes about women being very emotional and unable to keep their emotions under control. As a result of this research, an opinion has emerged that women act emotionally. However, the reason for this situation may be due to the prejudices that exist in society and are transmitted by social groups to each other. It may also be related to the fact that the feelings of female principals in the institutions in which they work override their professional management skills. On the other hand, it is also important at this point to show whether the situation of women's emotions hindering their professionalism occurs only when they are managers and whether female employees working in critical positions in different sectors have problems controlling their emotions or not.Participants stated that female managers had good

leadership, their managerial skills were weak, they could not be fair and impartial, and they were not solution-oriented. The participants whose opinions were consulted in Tok and Yalçın's (2017) think that female managers do not have a broad vision, and they cannot evaluate the events with limited leadership and managerial characteristics from a multi-dimensional and detailed perspective. In the study of Yücedağ and Günbayı (2016), female managers stated that they did not see themselves as good leaders. In Can's (2008) study, it is dominant that female managers do not have decision-making capacity, which is one of the characteristics that a leader should have. On the other hand, some researches have revealed that female managers can demonstrate more flexible and democratic attitudes and adopt a more organized, meticulous, measured, serious, and detailed understanding in their work (Çelikten & Yeni, 2004; Korkmaz & Moralıoğlu, 2010). The results of this study revealed different approaches together. In addition to the participants who think that female managers are good leaders, some female teachers stated that female principals' managerial skills are weak. This result also suggests that female leaders are not generally negative among their female followers, which also suggests that the quality of leader-follower relationships may be strongly influenced by followers' mental constructs of leadership and that their effects may diminish over time as a result of positive interactions.Participants described the working environment of female managers as chaotic, strong in communication, and supportive. Researchers stated that female school principals attach great importance to communication and human relations in the working environment (Baştuğ & Çelik, 2011; Baytun & Özerem, 2013; Çelikten, 2004; Eagly et al., 1992; Growe and Montgomory, 2001). In addition, they could create a versatile communication network at school (Çelikesir-Ünal, 2015), they were more successful ineffective communication (Karcı, 2012), and they provide an environment where the psychological needs of the employees are met (Özdil-Sağ, 2010).

On the other hand, male employees who do not want to work with a female manager may experience conflicts (Çelikersir & Ünal, 2010; Korkmaz & Moralıoğlu, 2010; Özdemir & Yaylacı, 2005). Because, as Hutchinson (2002) states, the perception that leaders should be men is seen as one of the most common obstacles faced by women who want to become school principals. Therefore, this perception can create conflicts. In addition, female managers who focus on communication also experience several problems caused by frequent and intense communication (Köse & Uzun, 2017; Sezer, 2006). In this study, the effect of mainly female principals on the school environment was defined as positive. This result may show that although employees have conflicts with female principals, female principals can also cope with conflicts at school.

Research reveals that there is no difference between the success of male and female school principals in management (Boydak Özan & Akpınar, 2002; Tok & Yalçın, 2017). However, in this study, the participants mainly emphasized the weaknesses of female school principals in leadership. Also in Çelikten's (2005) study, the participating female teachers indicated that it is more difficult to work with female principals. On the other hand, Mostafa (2005), Cortis and Cassar (2005) found that female teachers have more positive attitudes towards female administrators.These independent results for different groups show that, contrary to existing stereotypes, female teachers should avoid general preconceptions about female school principals. Not all female and male principals have the same characteristics. It is essential to examine the behavior of the leader without putting gender-related factors in focus. At the same time, school principals must be consistent in the decisions they make and implement. Must demonstrate leadership with a professional approach. This research examined the behaviors of female school principals from the point of view of female teachers working in private schools and presented different views on this issue. However, the study group only includes private schools in Istanbul. Future research could therefore be conducted in other types of schools or focus on principals' stereotypes of age and professional seniority, apart from gender, and to what extent these stereotypes predict teachers' performance.

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The Predictors of Work-Related Stress: Organizational Justice and Fatalism

Özgür ÖNEN[1]

[1]*Mehmet Akif Ersoy University, Faculty of Education, Burdur, Turkey* *0000-0002-3715-7488*

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ABSTRACT

The purpose of the current study is to understand the relationship between organizational justice and the effect of the fatalism on work related stress. Although, organizational justice has been found to be a significant predictor of the work related stress in previous studies, fatalism which can be related with work related stress and organizational justice as well, has not been studied before together. In this correlational study, organizational justice, four dimensions of fatalism and job type were considered as predictors and work-related stress was the criterion variable. In total, 100 academics and 66 support staff have participated to this study. Multiple regression analysis with backward elimination was conducted. Results indicated that organizational justice, job type and luck were significant predictors of the work-related stress. While an increase on organizational justice perceptions lowers the work-related stress, luck and work-related stress seem increasing together. Additionally, academic personnel have higher stress levels than support staff. However, superstition, personal control, and predetermination dimensions of the fatalism were not found to be significantly associated with work related stress. Policy improvements were offered in line with the findings and recommendations for future studies were prescribed in discussion.

Keywords:
Work related stress; stress among academics; fatalism; organizational justice

1. Introduction

The rate of change in every field in the twenty-first century, where people work more and spent longer hours to live a more comfortable and prosperous life than in previous, is also reflected in the change in individuals' expectations. As people's expectations increase, so does the expectations for them in business life. Some of these expectations were met but some of them not even people try harder. Individuals give some physiological and psychological reactions in challenging situations in which they cannot fully utilize their current potentials, cannot cope with the situations, and therefore their expectations are not met. These reactions are generally referred to as stress (Morey, Boggero, Scott, & Segerstrom, 2015).

Work related stress is one of the most important and rapidly growing factors affecting ones' health. According to "Stress in America: The State of Our Nation Report 2017" (APA, 2017) the increase on the percentage of Americans experiencing at least one symptom of stress (i.e. feeling nervous, anger, fatigue) in the past month reached to 75 which was 71 in 2016. Similarly, Health and Safety Executive (HSE) (2017) reports, that stress, depression or anxiety accounts for the 40 percent of the total work-related ill health cases in Britain. According to APA (2017), money and work are the top stressors among Americans, by considering the results of surveys being conducted more than a decade. There are numerous studies all over the world suggesting similar results too. For example, Leka, Griffiths and Cox (2003) indicates that work related stress can cause psychological (such as; depression, anxiety, illogical thinking and decision making and so on) and physical problems (such as; headache, muscle-skeleton disorders, high blood pressure and even in extreme cases heart attack). In fact,

[1] Corresponding author's address: Mehmet Akif Ersoy University, Faculty of Education, Burdur, Turkey
e-mail: onenonen@hotmail.com
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work related stress affects people negatively in any way (Kotteeswari & Sharief, 2014). For that reason, increasing our insights on work stress can be beneficial for coping the negative effects of stress.

When work-related stressors examined, job reorganization (change) and job insecurity, workload, being subject to unacceptable behaviors, lack of supervisory support, work-family conflict, mobbing, discrimination, interpersonal relations arise as common stressors (Pan-European opinion poll on occupational safety and health report [EU-OSHA], 2013; HSE, 2017; International Labour Organization [ILO], 2016; Leka, Griffiths, & Cox, 2003). As some of these factors related with justice, it is not surprising that researcher has empirically exhibited the relationship between organizational justice perceptions of employees and work related stress (Fox, Spector, & Miles, 2001; Judge, & Colquitt, 2004; Lambert, Hogan, & Griffin, 2007). However, there can be a factor which may be related with both justice perceptions of individuals and stress; fatalism which is not adequately examined enough in organizational behavior literature. Since, justice understanding of the individuals may be related with their fate understanding too (Elder, 1966). Jacobson (1999), for example, found that justice perception and fatalism are correlated with each other. Hunt (2004), also, argues that beliefs about wealth and poverty are generally examined by the view of individualist and structuralist point of views, but, fatalistic view is another source which in turn may affect the work related stress because of the relation between just distribution and work related stress. However, fatalism which is described as beliefs on non-personal forces for the things happens in the life (Wheaton, 1983), generally examined in theology (Kaya & Bozkur, 2015) and health behavior (Shen, Condit & Wright, 2009).

Fatalism can be described as "everything has been determined before, and one cannot change what will happen" (Kaya & Bozkur, 2015, p. 942). In literature, there is no consensus on the dimensionality of fatalism (Shen et al., 2009). As can be seen in Powe and Finnie's study (2003), scales measuring the fatalism generally regarded as only one dimensional. Shen et al. (2009), on the other hand, criticize that view and suggest a multi-dimensional solution which has predetermination, luck, and pessimism dimensions. Elder (1966), on the other hand, suggest theological and empirical fatalism dimensions for participants in India. Contrary, Hunt (1996), consider fatalism as one dimensional and also handles together with luck. In this study, as conducted in Turkish context where most of the people label themselves as Muslim, Kaya and Bozkur's (2015) study results are followed in which four dimensional factor solution is suggested, namely; predetermination, luck, personal control and superstitiousness. One of the interesting promises of their study is the addition of superstitiousness, which can be described as believing in protection power of some objects, being punished just after doing something by the power of undefined things cannot be explained by just luck or predetermination.

Hunt (2004; 1996) reports that, in American sample, people tend to believe that poverty and wealth are consequences of individual attributions which is followed by structuralist views, and least favorable of the beliefs are fatalistic views (God's will and Good Luck) however results also suggest that 25 percent of the participants think that fatalistic reasons (such as, luck) are important especially among disadvantaged groups. Ehsani and Hosseini (2015) also indicate that low income is significantly related with fatalism. Similarly, Aslantekin, Erdem, Aslan and Göktaş's study (2005) support that finding, and they add that fatalism level of the participants significantly differ according to educational level where higher levels of education indicate lower fatalism. Similarly, Beckert and Lutter (2013) report that spending money for lottery is significantly and positively predicted by low income and high fatalism which can be considered as a way of copping the poverty. Kaya and Bozkur (2015) even states that there are thoughts that fatalism used as a way to manage the low income people. For those reasons, poverty or wealth which can be considered as a consequence of distribution may also be related with organizational justice perception and in turn related with stress. By considering the previous studies, it can be said that less educated and disadvantaged or low income groups (Aslantekin et al., 2005; Beckert & Lutter, 2013; Ehsani &Hosseini, 2015; Hunt, 2004; 2002; 1996; Powe, Daniels, & Finnie, 2005; Straughan & Seow, 1998) may be more fatalistic. So employees who are paid lower, in this study the support staff, may show more work related stress due to being paid less, but at the same time, they may show higher levels of fatalism as well. However, fatalism can be a way for them to cope with this situation and may result a decrease in stress levels as well.

In health behavior studies, effect of fatalism is examined, especially, on cancer cases (e.g. De Los Monteros & Gallo, 2011; Miles, Voorwinden, Chapman, & Wardle, 2008; Powe et al., 2005; Powe & Finnie, 2003). In common, fatalism found to be a significant factor affecting the cancer screening behaviors in a negative way.

Fatalism also considered as a predictor of depression but can be thought as a way of coping strategy too (Aranda, Castaneda, Lee, & Sobel, 2001). Similarly, Egede and Bonadonna (2003), consider fatalism and other religious views as a coping strategy on diabetes cases. Park, Edmondson and Mills (2010), on the other hand, argue that stress and religiosity, which consist of the fatalism believes, have a recursive relation. So, it can be said that, lack of control on the things happening around us may cause stress, however blaming the external forces may also be a good tool for coping with the stress as a result of undesirable happenings. As in the case of undesirable consequences of unjust distribution happens to people, like in poverty situation, then, the people who have higher levels of fatalism should be living less stress. On the other hand, if fatalism is response to stressors, then mutual / reciprocal increase should be expected on both stress levels and fatalism scores.

While studying the relationship of fatalism and stress, it is also important to include justice perception to models, as they may be sharing some variance together. Studies regarding to justice on organizational level, suggest that satisfaction of the justice perceptions is very important to keep the employees together (Cropanzano, Bowen, & Gilliland, 2007). Employees evaluate the consequences of each decision taken in the organization and judge their fairness (Colquitt, 2001). However, these judgements are based on employees' subjective perceptions of fairness rather than the exact fairness (Cropanzano et al., 2007). So the employees' satisfaction about fairness is indeed how it's perceived by employees. In this context, justice and fairness are the concepts about the perceptions of the decisions and their consequences in organizational settings (Judge & Colquitt, 2004).

Organizational justice, although there are different views on its dimensionality, has three basic dimensions which are related with each other (Cropanzano et al., 2007; Neuman, 2004). Distributive justice, as one of the first defined dimension of the organizational justice is about the balance between the output of the employee and what is obtained as a result of it (Folger & Konovsky, 1989). Procedural justice, on the other hand, is about the role definition of the employees while having decision (Cropanzano et al., 2007), that is about the perception on how fair is the process while the decision is taken and implemented (Moorman, Blakely, & Niehoff, 1998; Tyler, 1988; Gilliland, 1993) and is derived from the law terminology (Greenberg, 1987). The last important component of the organizational justice is interactional justice, which is about treating employees with respect and dignity (Bies, 2005; Skarlicki & Folger, 1997) in other words it refers the quality of the interpersonal interaction in work settings (Cropanzano, Prehar, & Chen, 2002).

Organizational justice literature presents that justice perception of employees are related with some organizational and individual factors. For example, Efeoğlu and İplik (2011) have found that organizational justice perceptions of the employees are related with cynicism. Bakhshi, Kumar, and Rani (2009) found that distributive justice and procedural justice are significant predictors of organization commitment while distributive justice significantly predicts the job satisfaction. DeConinck and Stilwell (2004) also found significant relation between organizational justice and organizational commitment. Elovainio, Kivimäki, and Vahtera (2002) even indicated that organizational justice has an impact on the health conditions of the employees. McFarlin and Sweeney (1992) also suggested that pay satisfaction and job satisfaction can be predicted by distributive justice whereas procedural justice is a significant predictor of organizational commitment and employees' evaluation of managers.

As stated before, organizational justice is, additionally, a significant predictor of work-related stress (Fox et al., 2001; Francis & Barling, 2005; Judge & Colquitt, 2004; Lambert et al., 2007). If an employee thinks that s/he is not treated justly, and the employee has not got the power to change the situation, then employee may start to show stress symptoms. In this study, as already supported by the literature, organizational justice is considered as a significant predictor of work-related stress along with fatalism.

It is very important for university personnel who have a critical role in the development of science-producing and future-generating individuals to work in a healthy environment. The purpose of the current study is to understand the relationship between work related stress, organizational justice, job type and the possible effect of the fatalism on university personnel. Since employees faces many stressors which occur from injustice behaviors of the supervisors or unequal distribution of resources, fatalism as it is also considered as a source of distribution in society by some people, may be related with work stress. Additionally, employees having diverse positions in an organization may be payed and treated differently, so job type is also considered to be

related with work related stress. In this context the research question of this study is "Do organizational justice perceptions and fatalism level of university personnel predict their work-related stress perceptions?"

2. Method

2.1. Design

In this study, correlational study design is followed (Fraenkel & Wallen, 2006). For testing the hypothesis multiple regressions analysis was conducted. In this study, p value of .05 and below was accepted as the significance level. Total score of three dimensions of organizational justice, four dimensions of fatalism and job type are threaded as predictors of the work-related stress.

2.2. Participants and data collection procedure

Participants are chosen from the academics and support staff from the university of the researchers, as it is difficult to reach other work settings and universities for this kind of study where there are questions which may be considered as sensitive, since their fatalistic understanding may also reveal their religious understandings. Before conducting the study, permissions were gathered from ethic committee of the university. In order to warrant anonymity, participants informed that any questions that may yield their identity can be omitted, additionally questionnaires are collected in manner that no one can distinguish one from another. As a result, some of the participants did not indicate their title, responsibility, faculty or department. For that reason, it was impossible to give detailed information about participants, and include some demographics into the model. In total, 100 academics and 66 support staff have participated in the study, where the 85 of the participants were male and 70 of them were female. When the ages of the participants who have filled that information vary between 20 to 56.

2.3. Measures

2.3.1. Organizational justice scale. In order to measure the organizational justice perceptions of the participants, organizational justice scale developed by Niehoff and Moorman (1993) and adapted to Turkish by Yıldırım (2007) is used. The scale has three dimensions, Distributional Justice, Procedural Justice, and Interactional Justice. Cronbach alpha values of each dimension, in Turkish form, are .81, .89, and .95 respectively as reported by Yıldırım (2007).

2.3.2. Fatalism scale. In this study, for measuring the fatalistic understandings of the participants, Fatalism Tendency scale developed by Kaya and Bozkur (2015) is used. This scale has 24 items for measuring, four dimensions: predetermination, luck, personal control and superstitiousness. Internal validity test results of the scale can be considered satisfactory, as Cronbach alpha value for the whole scale estimated as .86, while .86 for predetermination, .71 for luck, .78 for personal control, and .78 for superstitiousness.

2.3.3. Job stress scale. For measuring the work-related stress, Job Stress Scale developed by House and Rizzo (1972) and adapted to Turkish by Efeoğlu (2006) is used. This scale is unidimensional and has seven items. Results regarding to internal validity show Cronbach alpha values between .71 and .89 in previous studies (e.g. Grandey & Cropanzano, 1998; Güler, 2013).

2.4. Limitations

One of the main limitations of this study was the impossibility of gathering detailed information from participants for anonymity reasons. Some little information, for example knowing one's age and department may easily reveal the participant's identity. For that reason, although participants asked to give information about these demographics, they were also informed that they can omit these questions. Many participants, in turn, did not respond these questions. So, it was impossible to compare the stress levels, or fatalism levels of participants on different levels of their academic career.

3. Findings

Before conducting regression analysis, a parametric statistical procedure, assumptions were checked. Results indicated nearly normal distribution for continuous variables, as controlled by skewness and kurtosis values and they were between -.565 and .625 values, additionally histogram graphs were on acceptable shape. As the control of z-scores of the variables indicated two outliers they have been removed from the data set, in total 164 participants' data were used in analysis. Additionally, residual plots were almost normally distributed

and there was no heteroscedasticity problem as the visual check of the P-P plots and scatter plots indicates. Multi-collinearity, another assumption of the regression analysis, was checked via Pearson correlations, VIF values and Tolerance values. Among organizational justice sub scales there were higher levels of correlation, between .49 and .79, detected. For that reason, total score gathered from the sub scales were used in this study. All other correlations after computing total scores for organizational justice, were below .41 (Table 1). Additionally, all the VIF values were below two on the last regression model and tolerance values were above .10. Auto correlation on the other hand controlled by Durbin Watson value and found to be around acceptable range (DW= 1.98). By considering all, regression analysis was conducted.

Table 1. *Correlations Among Dependent and Independents Variables*

	1	2	3	4	5	6	Mean	sd	Cronbach Alpha
1 Work related stress	-						16.60	5.84	.88
2 Justice	-.403**	-					3.34	15.34	.95
3 Luck	.222**	-.116	-				10.62	2.81	.63
4 Superstition	.046	.063	.410**	-			12.37	4.33	.76
5 Personal control	.003	.007	-.062	-.238**	-		22.61	3.59	.69
6 Predetermination	.072	.077	.223**	.338**	-.128	-	24.91	7.38	.68

*** Correlation is significant at the .01 level*

In this study regression analysis preferred, by backward elimination method, where all the variables are included at the first run and deletion of the most insignificant predictors in each run. Results revealed four models (Table 2). First model in which all the variables entered, explains 24 percent of the variance on work related stress significantly [F(6,163)=8.31, p<.05]. As personal control found least significant variable in the model, it is removed. In the second model in which 24 percent of the variance on work related stress can be explained significantly [F (5, 163) =10.03, p<.05]. In the second model, superstition was the least significant variable has a p value greater than .05 and removed from the analysis. In the third model, again, 24 percent of the variance significantly explained by justice, luck, predetermination, job-type [F (4, 163) =12.60, p<.05]. However, predetermination dimension has a p value greater than .05, and removed from the analysis as well. On the last run, all the variables entered to model, organizational justice, luck and job-type explained the almost 23 percent of the variance on work related stress significantly [F (3, 163) =15.78, p<.05]. When the standardized β values were checked on the final model, organizational justice (β = -.384, t=-5.488, p<0.001), luck (β =.200, t=2.842, p<0.05) and job-type (β = .187, t=2.679, p<0.05) were found to be significant predictors of the work related stress.

Table 2. *Multiple Regression Analysis Results*

	Model	R	R^2	R^2 Change	F	F Change
1	Justice, luck, superstition, personal control, predetermination, job-type	.491	.241	.241	8.310**	8.310
2	Justice, luck, superstition, predetermination, job-type	.491	.241	.000	10.034**	.007
3	Justice, luck, predetermination, job-type	.491	.241	.000	12.601**	.062
4	Justice, luck, job-type	.478	.228	-.012	15.777**	2.602

Note: Backward elimination method was used

4. Results and Discussion

Findings of the current study suggest that organizational justice perceptions of the participants is a significant negative predictor of work related stress, which means increase on the justice perceptions of the participants lower the work related stress levels of the university personnel. This finding is similar with the previous studies (e.g. Fox et al., 2001; Francis & Barling, 2005; Judge & Colquitt, 2004; Lambert et al., 2007).

In this study, among the fatalism dimensions, only luck is found to be a significant predictor of the work-related stress. Indicating that increase in the luck belief associated with the increase on work related stress. This may be due to the fact that, participants who experiences more work-related stress may try to explain undesired outcomes in work settings by luck. This may help them cope with the stress faced in work settings, as Kuşat (2000) and Foster and Kokko (2009) suggest. Similarly, West, Griffin and Gardner (2007) suggest that luck and similar beliefs increase when there is ambiguity and help people to find causal explanations for the

outcomes. This finding can, also, be considered as a support for the Hunt's (2004) study in which participants, coming from lower socioeconomic backgrounds, consider unjust distribution occurs from fatalistic forces. Academic personnel found to be experiencing higher levels of stress in this study too. This may be due to higher amount of workload in Turkish university settings (Sarvan & Karakaş, 2001). Additionally, promotion expectations of the academic personnel may lead higher levels of stress as well, especially for assistant professors (Göksel & Tomruk, 2016). However, support staff, in general, do not rush for promotion, since they have limited opportunity to get promotion in organizational structure of the universities in Turkey, at the same time finding a fatalistic explanation may be reducing their stress level too. Additionally, academics are also responsible from teaching in universities, which is generally thought as one of the most stressful occupation (Johnson et al., 2005).

Surprisingly, procedural and interactional justice were not found as significant predictors of work-related stress. This may be due to facts that, as a bureaucratic public university where most of the personnel and managers are well educated, stuffs behave each other kindly and procedures are executed in similar manner for all. Moreover, superstition, personal control and predetermination dimensions were not found significant predictors of work-related stress.

By considering all, it can be recommended that there is a need for some improvements on role definitions, salaries, promotions, and work conditions of academics in Turkey. As some of the academics work without job security, and promotion conditions are considered very strict. While some academics who have finished their doctorate, studies work as research assistants, some of them have assistant professor degree, which differs their earnings and rights significantly. However, work conditions and academic culture vary among universities dramatically. Additionally, regional cultures also differ from one province to another. For that reason, similar studies can be conducted before setting an understanding on the possible effect of fatalism. It should be noted that, this study has been conducted in university setting where most of the participants have higher levels of education. Academics, some of the participants of this study, conduct scientific research. In other organizations, where employees are not familiar with scientific methods, other dimensions of the fatalism may also be related with job stress. Conducting similar studies in different work settings is recommended for understanding possible effect of fatalism on organizational issues.

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Self-blame Regret, Fear of COVID-19 and Mental Health During Post-Peak Pandemic

Hacer BELEN[1]

[1]*Bursa Uludag University, Faculty of Education, Bursa, Turkey* *0000-0001-9065-3504*

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ABSTRACT

The novel Coronavirus pandemic caused strong negative emotions including fear, and stress and impacted the mental health of individuals worldwide. One of the emotions linked with mental health and infectious disease is self-blame regret. Thus, the current study investigated the role of fear of COVID-19 and perceived stress in the relationship between self-blame regret and depression. As a means of such investigation, the current research was conducted based on quantitative data and the research sample was recruited via a convenient sampling method. A community sample of 352 individuals in Turkey (71 % female and 29 % males), ranged between in age 18 and 63 (M= 28.90±8.90), completed Fear of COVID-19 Scale (FCV-19S), Perceived Stress Scale (PSS-10), Depression, Anxiety, and Stress Scale (DASS-21), and responded to one item concerning the self-blame regret. Results demonstrated that self-blame regret is positively correlated with fear of COVID-19, perceived stress, and depressive symptoms. Moreover, serial multiple mediation analyses demonstrated that both fear of COVID-19 and perceived stress mediated the relationship between self-blame regret and depression. The findings showed that self-blame regret, fear of COVID-19, and perceived stress are determinants of depressive symptoms, suggesting that such factors are important in understanding these issues.

Keywords:
Self-blame regret, fear of COVID-19, perceived stress, depression, serial mediation

1. Introduction

Pandemics are large-scale outbreaks that pose serious potential health risks to the affected community. The first outbreak of the "once-in-a-century pandemic" in December 2019 affected people globally, with a case fatality rate comparable with the 1918 influenza pandemic (Gates, 2020). The disease's (COVID-19) impact is severe to an extent that, as of December 31, approximately 15 million infected cases have been recorded, with 1.5 million deaths globally (European Centre for Disease Prevention and Control, 2020).

Considering the fast transmission of the virus between humans, high mortality rates, and strict prevention measures including travel bans, home confinements, social distancing, compulsory face mask wear, school suspensions, this time of global crisis is characterized by strong negative emotions and deteriorated mental health. Several studies reported the heightened negative affectivity symptoms due to the pandemic (Limcaoco et al., 2020) and documented that the COVID-19 pandemic exacerbated mental health issues including depression across the world (Bäuerle et al., 2020; Choi, Hui & Wan, 2020; Nickell et al., 2004; Tsang, Scudds, & Chan, 2004).

One of the common responses to adversity and life-threatening situations is surely stress. Stress arises when an individual perceives that environmental challenges are beyond the individual's capacity to cope (Cohen, Janicki-Deverts & Miller, 2007). Brooks and colleagues (2020) suggested that the COVID-19 pandemic and associated quarantines call forth substantial and long-lasting psychological impact including increased stress.

[1] Corresponding author: Bursa Uludağ University, Faculty of Education, Bursa, Turkey.
e-mail: hacerbelen@uludag.edu.tr
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As such, previous research concerning the current pandemic revealed heightened stress among individuals due to fear of infection, transmitting the virus to loved ones, lack of information and boredom, and loss of social communication (Zandifar & Badrfam, 2020; Zhang et al., 2020). In support, several studies documented that perceived stress is an important concept to investigate during the pandemic (Du et al., 2020; McAlonan et al., 2007; Mo et al., 2020; Preti et al., 2020) and might be impactful on developing depression symptoms (e.g., Gotlib et al., 2020; Montano & Acebes, 2020).

Similar to previous epidemics, the COVID-19 pandemic caused strong negative emotions among individuals. Several studies reported greater levels of frustration and boredom (Zhang et al., 2020), increased anxiety and depression (e.g., Nickell et al., 2004; Tsang, Scudds, &Chan, 2004), heightened fear, and particularly elevated levels of fear of COVID-19 (e.g., Belen, 2020; Reznik et al., 2020). Research regarding the current pandemic highlighted that fear of COVID-19 is associated with critical aspects of mental health (Harper et al., 2020; Pakpour & Griffiths, 2020; Satici et al., 2020). Thus, as a vital emotion during such a pandemic, exploring this is certainly worth studying.

1.1. Self-blame Regret and Mental Health

As noted, strong negative emotions exacerbate mental health issues. Research regarding emotions and mental health in the context of infectious diseases is still scarce. Yet, one of the researched emotions linked with mental health during the pandemic is regret (Limcaoco et al., 2020). Regret is an emotional experience elicited when an individual is unsatisfied with the acquired outcome among the possibility of better options (Shepherd & O'Carroll, 2014). Despite the frequency of experiencing anxiety outweighs the regret in daily life, the negative influence of regret is far greater than that of anxiety in terms of mental health (Brewer, DeFrank & Gilkey, 2016). An array of studies documented that increased levels of regret associates with increased levels of depression (e.g., Bruine de Bruin et al., 2016; Yu, Chen, Zhao, & Yu, 2017). Another vein of regret studies focused on the role of regret in decision-making processes highlighting that regret is one of the vital emotions in the context of decision-making. One recent model concerning the regret-decision-making process is Decision Justification Theory that considered regret as two important components (DJT; Connolly & Zeelenberg, 2002). Among the components, self-blame regret is strongly linked with mental health, particularly depression. In support, one crucial study demonstrated that currently depressed individuals reported greater levels of self-blame regret in response to hypothetical scenarios (Kraines, Krug & Wells, 2017). Self-blame regret conveys the emotion when the individuals experience regret and blame themselves for the poorer decision (Wu & Wang, 2017) and this component of regret focuses on self-responsibility for not selecting the better option (Nicolle, Bach, Frith & Dolan, 2011). During such a pandemic, self-blame regret is off important to explore in terms of understanding the emotion and its relationship with mental health, specifically after the normalization process began. Such a period is crucial as prior to the normalization process, prevention measures were maintained mainly by governments, and home confinements and face mask wear were compulsory. Yet, the normalization process eased some of the restrictions during the post-peak pandemic, and self-responsibility in taking preventive measures became more important. In this regard, individuals are more prone to experience self-blame regret not taking enough cautions in case of contracting the virus during the post-peak pandemic.

1.2. Present Study

As noted, research is scarce in terms of documenting the relationship between self-blame regret and mental health, specifically depression. To the best of the knowledge, there is only one study to report such a link (Kraines, Krug & Wells, 2017). Yet, more variables are needed to be examined to understand emotion and its relationship with mental health. In this regard, fear of COVID-19 and perceived stress are potential mediators during the post-peak pandemic. Thus, the main aim of this study was to test the relationship between self-blame regret and depression as a mental health indicator with a Turkish sample as mediated by individuals' levels of fear of COVID-19 and perceived stress. The hypotheses of the study included:

*H1.*Self-blame regret will be positively related to depression
*H2.*The relationship between self-blame regret and depression will be mediated by fear of COVID-19
H3. The relationship between self-blame regret and depression will be mediated by perceived stress
H4. The relationship between self-blame regret and depression will be serially mediated by fear of COVID-19 and perceived stress.

2. Methodology

2.1.Research Model

The present study was designed as correlational research in the quantitative realm. Literature indicates that studies in educational settings often employ survey research methods and use test scores and self-report measures to describe the data (descriptive approach) or confirm the proposed hypothesis and research models (analytical approach) (Cohen et al., 2018). To examine the research hypotheses, the present study used an analytical approach to test the mediator roles of fear of COVID-19 and perceived stress in the relationship between self-blame regret and depression during the post-peak pandemic.

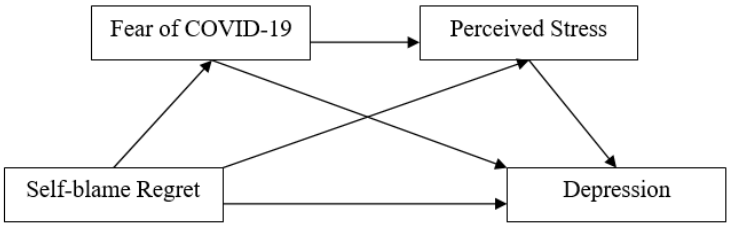

Figure 1. *Proposed Research Model*

2.2. Participants

Participants were drawn from a public university located in the Northeast of Turkey using online Google Forms. To recruit the participants, a convenient sampling method was used to prevent the loss of time, money, and labor as the COVID-19 pandemic demanded urgent investigations regarding the mental health of university students. To evaluate the adequate sample size, five observations for each parameter were determined as recommended by Bentler and Chou (1987). In this regard, the research sample encompassed three hundred fifty-two individuals (71 % female and 29 % males) and ranged between age 18 and 63 (M= 28.90±8.90). Their socioeconomic levels ranged from medium (70.5%), high (15.1%), very high (0.9%) low (12.2%) and very low (1.4%). Participants reported that the maximum number of people (friends and relatives) they lost to COVID-19 is 2 while the acknowledged number of people who tested positive is 38.

2.3. Data Collection Tools

Fear of COVID-19 Scale (FCV-19S).FCV-19S is composed of seven items assessing the extent to which individuals fear COVID-19 (Ahorsu et al., 2020) and rated based on a five-point rating scale. The sum of the item scores provides the total score of the scale, wherein higher scores indicate higher levels of fear of COVID-19. The psychometric properties of the Turkish form of the scale (Satici et al., 2020) have been widely supported and Cronbach's alpha reliability for the scale in this study was excellent (α= .90).

Perceived Stress Scale (PSS-10). PSS-10 comprises ten items measuring the extent to which situations in individual life are perceived as stressful (Cohen et al., 1983) and rated based on a five-point rating scale. Sum of the item scores after reversing the negatively keyed items provide the total score of the scale with higher scores indicative of higher levels of perceived stress. The psychometric properties of the Turkish form of the scale (Kaya et al., 2019) have been widely supported and Cronbach's alpha reliability for the scale in this study was good (α= .81)

DASS-21 Depression Subscale (DASS-21). DASS-21 is comprised of twenty-one items evaluating the severity and the frequency of the symptoms over the past week and rated based on a four-point rating scale (Lovibond & Lovibond, 1995). The scale consists of three subscales of depression, anxiety, and stress, and the subscale scores are obtained via the sum of the item scores of the relevant dimensions with higher scores indicative of higher levels of depression, anxiety, and stress. The psychometric properties of the Turkish form of the scale (Yıldırım et al., 2018) have been widely supported and Cronbach's alpha reliability for the scale in this study was good (α= .89)

Self-blame Regret. Self-blame regret was evaluated with one item asking participants "How much would you blame yourself for not taking enough prevention measures if you catch the Coronavirus-19?" The item was

rated based on a 5-point Likert scale (1=not at all, 5= extremely). Higher scores demonstrated higher levels of self-blame regret.

Process: Sample was reached through word of mouth and advertisement of the study on social media sites (Facebook, WhatsApp groups, etc.). Data collection started after the normalization process was declared by the government. Responses to the scales were collected via an online survey webpage, and the consent form to partake in the study was obtained via the first page of the online survey.

The study procedure was approved by Bursa Uludag University Ethics Committee (10/07/2020, 92662996-044/E.20325).

2.4. Data Analysis

In terms of main analyses, serial multiple mediation analysis was performed with PROCESS macro for SPSS (Hayes, 2018) to test the mediation effects of how self-blame regret affects fear of COVID-19, how fear of COVID-19 affects perceived stress, and how perceived stress affects depression. Using 5000 bootstrap samples with 95% confidence intervals (CI), the paths that do not include zero were considered as evidence of a significant indirect effect (Preacher & Hayes, 2008).

3. Findings

Table 1 demonstrates Cronbach's alpha reliability coefficients, the minimum, maximum, mean, standard deviation, skewness, kurtosis statistics for main study variables, and Pearson Product-Moment correlations between the variables. As shown in Table 1, no severe violations of normal hypotheses were encountered (e.g., skewness from 0.10 to 0.47, kurtosis from −0.94 to 0.03) (West, Finch, & Curran, 1995). Bivariate correlations between variables were computed and results demonstrated that self-blame regret was positively correlated with depression, fear of COVID-19, and perceived stress coefficients ranging between r = .35 and r = .20.

Table 1. *Descriptive Statistics and Intercorrelations between Main Study Variables*

	1	2	3	α	Min	Max	M	SD	Skew	Kurt
1. Self-blame R	1			-	1.00	5.00	2.92	1.35	0.14	-0.94
2.Depression	.30**	1		.89	0.00	21.00	9.68	5.76	0.10	-0.92
3.Fear of COVID	.35**	.32**	1	.90	7.00	35.00	17.42	6.77	0.47	-0.41
4.Per. Stress	.20**	.68**	.21**	.81	14.00	48.00	28.67	6.69	0.24	0.03

Note. Min= Minimum, Max=Maximum, M=Mean, SD= Standard Deviation, Skew=Skewness, Kurt= Kurtosis**. p< .001

3.1. Serial Multiple Mediation

To test the mediating effect of fear of COVID-19 and perceived stress in the relationship between self-blame regret and depressive symptoms, a serial multiple mediation analysis was conducted. Results of the serial mediation analyses revealed a positive direct effect of self-blame regret on depression supporting Hypothesis 1 (β = .30, p< .001). Including mediators of fear of COVID-19 and perceived stress in the model, this coefficient was reduced though it was still significant (β = .12, p< .05). Moreover, self-blame regret positively predicted both fear of COVID-19 (β = .35, p< .001) and perceived stress (β = .14, p< .05). Figure 2 demonstrates the results of serial mediation estimations.

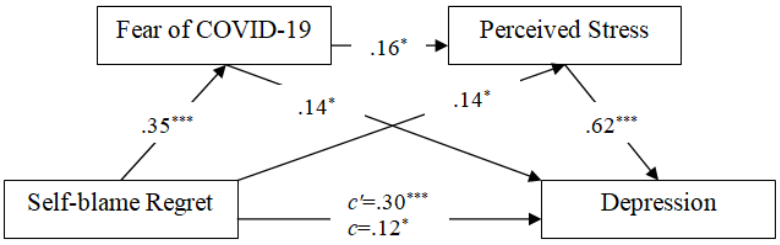

Figure 2. *Serial Multiple Mediational Model. Path Coefficients Were Standardised*

*(*p < .05, **p < .01,***p < .001)*

Serial mediation estimations also indicated significant indirect effect of self-blame regret on depression through fear of COVID-19 (β = .05, SE = .02, 95% CI = [.017, .087]) and perceived stress (β = .09, SE = .04, 95% CI = [.013, .161]) supporting Hypothesis 2 and 3. Confirming hypothesis 4, the indirect effect of self-blame regret on depression via fear of COVID-19 and perceived stress was tested and indirect effect was 0.04 (SE = .01, 95% CI = [.013, .065]). Table 2 shows standardized indirect effect of fear of COVID-19 and perceived stress on depression.

Table 2. *The Standardized Indirect Effect of Fear of COVID-19 and Perceived Stress on Depression*

Path	Coefficient	95% CI	
		UL	LL
Self-blame regret ➔Fear of Covid-19➔ Depression	.05	.017	.087
Self-blame regret ➔Perceived Stress➔ Depression	.09	.013	.161
Self-blame regret ➔ Fear of Covid-19➔ Perceived Stress➔ Depression	.04	.013	.065
Total Indirect Effect	.17	.093	.253

Note. CI= Confidence Interval, LL= Lower Limit, UL= Upper Limit

4. Discussion, Conclusion, and Recommendations

The covid-19 pandemic caused strong negative emotions worldwide due to the strict measures to prevent the disease including compulsory home confinements, face mask wear, and social distancing. Yet, the normalization process eased government-related restrictions during the post-peak pandemic that called upon self-responsibility to take preventive behaviors. Thus, individuals will be more prone to experience self-blame regret not taking enough cautions in case of contracting the virus during such critical times. In this regard, the current study sought to understand the role of self-blame regret on mental health issues during the post-peak pandemic and hypothesized that a) self-blame regret will be positively related to depression b) the relationship between self-blame regret and depression will be mediated by fear of COVID-19 c) the relationship between self-blame regret and depression will be mediated by perceived stress d) the relationship between self-blame regret and depression will be serially mediated by fear of COVID-19 and perceived stress.

In support of the first hypothesis, the findings demonstrated that self-blame regret was positively related to depression conveying that individuals high in levels of blaming themselves in case of virus contraction also demonstrated higher levels of depressive symptoms. Such results are in line with the previous literature. For instance, an array number of studies revealed that increased levels of regret is associated with elevated levels of depression (Chase et al., 2010; Lecci, Okun & Karoly, 1994; Monroe, Skowronski, MacDonald & Wood, 2005; Roese et al., 2009). In support and more importantly, one critical study revealed that clinically depressed individuals reported greater levels of self-blame regret compared to the healthy and previously depressed individuals (Kraines, Krug & Wells, 2017).

Concerning the second hypothesis, the results revealed that fear of COVID-19 mediated in the relationship between self-blame regret and depression suggesting higher levels of self-blame regret contributes to increased levels of fear of COVID-19, which in turn contributes to elevated depressive symptoms. Essentially, fear of COVID-19 is a recent concept although its literature is rapidly expanding. Yet, no studies per see documented the link between self-blame regret and fear of COVID-19 and no study to support the findings of the current study. Despite this, the finding is congruent in terms of the conceptual frameworks of the constructs. For instance, individuals who perceive that they will considerably blame themselves in case of catching the disease will also experience higher levels of fear concerning the virus. In a similar vein, empirical studies also supported that cancer patients' decisional regret scores predicted fear of recurrence of the disease (Maguire, Hanly, Drummond, Gavin & Sharp, 2017). In regards to fear of COVID-19 and depressive symptoms, a growing body of pandemic research indicated that fear of COVID-19 impacts depressive symptoms confirming the findings of the current study (Fitzpatrick, Harris & Drawve, 2020).

Regarding the third hypothesis, the findings of this study reported that perceived stress mediated the link between self-blame regret and depression. The findings concur with the previous literature documenting the link between self-blame and psychological stress (Martin & Dahlen, 2005; Straud & McNaughton-Cassill,

2019). Moreover, current pandemic studies also revealed that changes in stress levels were found correlated with changes in depressive symptoms (de Quervain et al., 2020).

In accordance with the main hypothesis, fear of COVID-19 and perceived stress mediated the relationship between self-blame regret and depression. In line with this hypothesis, previous studies reported that fear of COVID-19 inflates perceived stress (Bakioğlu, Korkmaz & Ercan, 2020); perceived stress (e.g., Zhang, Peters & Chen, 2018) and particularly pandemic related stress contributes to elevated levels of depressive symptoms (Montano & Acebes, 2020). Taking together, within the framework of all discussed findings, it can be concluded that self-blame regret impacts depression through fear of COVID-19 and psychological stress.

There are central things to be highlighted in the present study. First, this is the first study to report the positive association between self-blame regret and fear of COVID-19. Essentially, the literature for self-blame regret is scarce though the current study reported its vitality on one of the pandemic-related concepts, namely fear of COVID-19. Second, the current study provided a comprehensive model to dismantle the relationships between emotion self-blame regret and depressive symptoms through fear of COVID-19 and perceived stress. Though, several limitations should be taken into consideration. Chief among these limitations, the current study was cross-sectional and self-report in nature. Thus, future studies should employ other methods such as qualitative and longitudinal designs. Another limitation included the number of participants represented within the sample in terms of gender. Despite the recruitment procedure targeted a homogenous sample; the number of females superseded the number of males within the sample. Thus, future studies should aim to include a similar number of participants from both genders to support the generalizability of the results. Notwithstanding these limitations, this study illuminates the underlying mechanism behind the relationship between self-blame regret, fear of COVID-19, perceived stress, and depressive symptoms.

5. Implications and Recommendations

The findings of the current study provide some implications for research and practice, especially in terms of the mental health of university students. According to recent studies, university students are one of the most affected communities by the COVID-19 outbreak and associated consequences (Kaparounaki et al., 2020). Thus, the findings of this study are insightful to understand the factors behind university students' dysfunctional responses to the pandemic. With further studies, understanding the causal role of such factors on mental health might contribute to important avenues of future research. Second, findings from the present study demonstrated that self-blame regret had a predictive effect on fear of COVID-19, perceived stress, and levels of depression university students experienced. Although such findings do not propose causal inferences, those results nevertheless highlight that self-blame regret plays a key role in the development of depressive symptoms through mediators. Considering one of the mediators is a well-documented concept impactful on the mental health of the individuals during times of COVID-19 crisis (fear of COVID-19), present findings implicate the potential critical impact of self-blame regret on depressive symptoms. Thus, further studies might include the elements of self-blame regret as well as fear of COVID-19 and perceived stress in interventions and treatments to reduce depression levels of university students during global emergencies such as the COVID-19 outbreak. Moreover, especially mental health providers might use strategies to diminish self-blame regret, pandemic-related fear, and stress to promote better mental health in universities. Specifically, strategies targeting self-blame regret could be key to eliminate the negative effects of the COVID-19 pandemic on students' mental health and help them to improve their mental well-being.

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Perceived Social Support as a Predictor of Teacher Candidates' Smartphone Cyberloafing

Songül KARABATAK[1], Müslim ALANOĞLU[2]

[1]*Faculty of Education, Fırat University, Elazığ, Turkey* *0000-0002-1303-2429*

[2] *Turkish Embassy in Podgorica, Montenegro* *0000-0003-1828-4593*

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ABSTRACT

This study investigated whether teacher candidates' perceived social support (PSS) predicts smartphone use during lectures. To achieve the aim of the study, a relational survey model was used. The study sample composed of students studying at the College of Education in Elazığ Province, Turkey, during the 2019-2020 academic semester. The correlation analysis was conducted to determine the relationships among the variables, and hierarchical linear regression analysis was used to determine the predictive effects of demographic characteristics (gender and class) and PSS on smartphone cyberloafing. The results of the study revealed a significant, negative, and low relationship between PSS and smartphone cyberloafing. Social support from family negatively predicted smartphone cyberloafing during lectures, while social support from significant others positively predicted it. Finally, the family and significant other subscales significantly predicted interactive, browsing, and entertainment cyberloafing. In contrast, the friends subscale predicted only interactive cyberloafing. The belief that a sense of trust in family and needed family support in times of need could decrease smartphone cyberloafing and lead teacher candidates to focus more on teaching. Educational institutions should develop policies that involve families at every stage of education, and decisions should be made with the support of experts, institutions, or organizations on problematic issues.

Keywords:
Perceived social support, smartphone cyberloafing, teacher candidates, lecture.

1. Introduction

As a result of the transition to university life, significant changes occur in the students' social environment. Some students move to different cities, while others live in the same town, but they change their social environment in both cases. In other words, they diversify their social support resources. Social support, which plays an important role in improving social integration, is defined as feedback towards a behavior, a thought, or a share. Social support is also defined as any support provided by the immediate social environment to those especially in difficulties and anxiety (Eker & Arkar, 1995).

Shumaker and Brownell (1984) define social support as a resource exchange between at least two people who provide and receive support and mainly aim to increase the well-being of the receiver of support. Thus, there are different interactions and relationships between individuals in the process of social support (Zimet et al., 1988). While social support is accepted as realized helping behaviors, the belief that these behaviors may arise in distress is expressed as PSS (Özdemir, 2013). Perception levels regarding this support are related to individuals' trusting their support resources (family, spouse, friends, etc.) and believing that they will receive the necessary support when needed (Sarason & Sarason, 1982). In addition to the support that the individual gets by interacting. Yıldırım (1997) states that the individual's family, family environment, friends, opposite-

[1]Corresponding author's address: Radosava Burica BB. Podgorica/Montenegro
e-mail: muslimalanoglu@gmail.com
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sex friends, teachers, colleagues, neighbors, ideological, religious, or ethnic groups, and the society in which the individual lives constitute the social support resources of the individual. Hupcey (1998) further narrows these resources and states that the individual's family, spouse, children, and close friends constitute their social support resources. Zimet et al. (1988) limit social support resources to the individual's family, friends, and significant other. With the developments occurring within the dynamics of life, differences in individuals' social support resources and their access to these resources also happen.

Cohen and Wills (1985) also cite social support resources as respect support, information support, social friendship, and instrumental support. Supporting respect is information that relates to the acceptance and sense of dignity of the individual. This source also refers to self-esteem and emphasizes that the individual is valued and accepted despite any difficulties or personal flaws.This support is also called emotional support, meaningful support, self-esteem support, and close support. Information support helps to understand, identify, and cope with problem situations. This type of support is also referred to as advice, assessment support, or cognitive guidance. Social friendship support is to spend time with other individuals in leisure and entertainment times. This dimension is also called messy support and belonging. Finally, instrumental support is the provision of necessary services, financial assistance, and resources. Moreover, it is also called aid, material, and concrete support.

The internet provides comfortable access to information and manipulates social relationships, and it is a tool that makes social support always accessible by making individuals feel less alone and feel more comfortable (Leung, 2007). In particular, the internet provides individuals access to social support resources when they need it, and it may be instrumental support for them. For example, an individual who receives less social support than colleagues and superiors makes more cyberloafing in the workplace than an individual with a higher social support level (Reinecke, 2009). This may mean that the individual uses the internet as instrumental support when they cannot reach the support source. Leung and Lee (2005) found a positive relationship between participation in leisure activities on the internet and social support. The internet is an indispensable tool for people to engage in various activities such as socializing, entertainment, and information seeking, and smartphones play an essential role in providing internet access. Smartphones are technological tools that provide convenience in communication and many subjects such as education, awareness of the environment, health, entertainment, fast access to information, and interaction with others via social networks. Therefore, smartphones are communication tools related to individuals' perceptions of social support (Mei et al., 2018). All age groups use smartphones, but research has revealed that young people mostly use them. Students do not give up smartphones in classroom environments, mainly because they provide practical access to information. However, they are become busy both physically and mentally due to using their smartphones during the lesson (Dirik, 2016).

As an extension of both internet access and the widespread use of smartphones, students started to exhibit new behaviors such as communicating with their friends, watching movies, listening to music through their smartphones during the lecture. Cyberloafing during the lectures is defined as the students' excessive and irrelevant use of the internet through the smartphone during the lectures. This is the in-class cyberloafing behavior that many students engage in, sometimes knowingly and sometimes unknowingly. The main cyberloafing behaviors during lecture are interactive cyberloafing, entertainment cyberloafing, and browsing-related cyberloafing (Blau et al., 2006). If smartphones are used for educational purposes during the lecture, they provide students the information they want. In this case, these behaviors performed interactively or as browsing-related cyberloafing may give the students instrumental and informational support. However, cyberloafing during the lecture can lead to adverse psychological and social effects on students' learning processes (Aljomaa et al., 2016). Because entertainment and interactive cyberloafing can provide students with social support due to their social interaction, it may cause their distraction during the lecture (Ott et al., 2018; Ragan et al., 2014).

In the literature, it was observed that such behaviors as digital game addiction (Barut, 2019), smartphone addiction (Gökçearslan et al., 2016; Gökçearslan et al., 2018), nomophobia (Büyükçolpan, 2019), social media addiction (Bilgin & Taş, 2018). In addition problematic internet use (Martinez et al., 2011; Oktan, 2015), internet addiction (Esen & Gündoğdu, 2010; Mete, 2017), problematic smartphone use (Fu et al., 2020), and displaying problematic behaviors (Hardie & Tee, 2007) have relations with PSS. PSS and problematic smartphone use also showed a negative correlation in empirical studies (Gökçearslan et al., 2018). Yıldırım (1997) also

suggested a positive relationship between PSS from family, friends, teachers and academic achievement. However, smartphone addiction can negatively affect social relationships and academic performance (Seo et al., 2016). Teenagers may overuse their smartphones, and this may cause social, familial, and academic problems (Gökçearslan et al., 2016).

As a result of technological advances and the overuse of smartphones, one of the issues that researchers have been working on extensively in recent times is the technological (say, smartphone and internet) addictions (Gökçearslan et al., 2018) and the effect of technology on student's social relations (Kalungu & Thinguri, 2017). In the study by Mete (2017), it was observed that PSS significantly predicted the internet addiction of university students. Tanrıkulu's (2019) study showed that the education faculty students' PSS levels significantly predicted the levels of social self-efficacy. Çivitci's (2015) study revealed that social support has a regulatory function in the relationship between self-esteem and constant anger. In Konan and Çelik's (2019) study, teacher candidates' social support perceptions significantly predicted their interaction anxiety in a negative way. In Zorlu-Yam and Tüzel-İşeri's study (2019), the levels of PSS by teacher candidates significantly predicted their social competence levels.

A limited number of studies examine the relationship between perceptions of social support and smartphone cyberloafing (Konan & Çelik, 2019) and perceptions of social support and cyberloafing (Goekçearslan et al., 2018). Cyberloafing is one of the events that negatively affect the efficiency and productivity of learning and teaching activities in educational environments (Saritepeci, 2019). A negative relationship was found between in-lecture cyberloafing and academic performance. Moreover, many studies reveal the harmful effects of smartphone use during lectures (Rosen et al., 2011; Sana et al., 2013). Cyberloafing behavior in the class reduces students' active participation in learning activities (Heflin et al., 2017), consumes cognitive resources that can be used for classroom learning (Sana et al., 2013), and negatively affects students' lecture learning and academic achievement (Wu et al., 2018). The idea that determining the relationship between teacher candidates' cyberloafing behaviors during the lecture and their social support status would help understand student behavior and achievement inspired us to begin this study. In addition, the most crucial measure to be taken to prevent cyberloafing during the lecture is to inform and raise awareness of students. The most influential people who can do awareness-raising activities are teachers. Therefore, in this study, it is thought that working with teacher candidates who will touch the lives of a large part of society and be an effective source of social support when they are appointed to the profession will contribute more to the field. In addition, the most crucial measure to be taken to prevent cyberloafing during the lectures is to raise awareness of students. The most influential people who can do awareness-raising activities are teachers. For this reason, in this study, it would be more appropriate to work with teacher candidates who would touch the lives of a large part of the society and be a valuable source of social support when they were appointed to the profession and contribute more to the field.

In this context, it can be said that PSS can affect the level of smartphone cyberloafing that teacher candidates would make during the lecture. It is also pointed out that social support harms young's negative behavior (Jackson & Warren, 2000). Therefore, teacher candidates' determination of the level of PSS and their perception of the source from which this support comes can guide our understanding of their behavior. Given the developments in today's mobile internet technology, it is expected that this study will provide clues on how to prevent this cyberloafing by revealing whether social support is among the reasons for using smartphones during lectures. In addition, it is thought that this study can give important ideas about whether smartphone cyberloafing, which is considered to have negative consequences for students, can be prevented with PSS.

Additionally, research results show that the teacher candidates' gender (Arıkan & Özgür, 2019; Askew, 2012; Çok & Kutlu, 2018; Tanrıverdi & Karaca, 2018) and the grade they study in (Tanriverdi & Karaca, 2018; Yılmaz, 2017) cause differentiation in cyberloafing behaviors. It shows the importance of controlling these variables in determining the relationship between teacher candidates' PSS and cyberloafing. Therefore, in the present study, the teacher candidates' gender and grade were also included in the analysis as control variables.

This study aimed to determine whether teacher candidates' PSS levels predict smartphone cyberloafing during the lecture. For this purpose, answers were sought to the following questions:

- Is there any relationship among research variables (PSS, smartphone cyberloafing, teacher candidates' gender, and grade)?

- Do teacher candidates' demographic characteristics predict smartphone cyberloafing during the lecture?
- Do teacher candidates' PSS levels predict smartphone cyberloafing during the lecture?

2. Methodology

2.1. Research Model

The relational survey model was used in this study. The relational survey model is used to determine the direction and degree of the relationship between two or more variables (Creswell, 2012). The relational survey model can determine relationships with statistical methods such as correlation and hierarchical linear regression. Therefore, in this study, the relationships between teacher candidates' demographic characteristics, social support, and smartphone cyberloafing levels in the research method were examined with this model.

2.2. Research Sample

The study population consisted of 1898 students studying at the education faculty in Elazig, located in the eastern part of Turkey, in the 2019-2020 academic year. Four hundred ninety-two students at 99% confidence level and 5% error level should be reached from the population. This study collected data from 497 students (99% confidence and 4.96% acceptable error level) selected from this population by the simple random sampling method. In simple random sampling, the researcher selects participants for the sample so that any individual has an equal probability of being selected from the population (Creswell, 2012).

This study sample determination process formed a random coded student numbers table with 100 rows and 19 columns. To use this table, firstly, unique numbers for all students in the population were assigned. For example, there were 67 students in the first year of primary school teaching. These students were coded from CT1-1 to CT1-67. Then, starting anywhere in the table, you matched the numbers on the list with the numbers in the table. You started at the top left of the table and went down the column. So it continued down the column until we had selected the number of students needed for the sample. 317 (63.8%) of the teacher candidates are women and 180 (36.2%) are men.

2.3. Data Collection Tools

The data was collected by the researchers with a data collection form. The Multidimensional Scale of PSS and Smartphone Cyberloafing Scale in Class were in this data collection form.

The Multidimensional Scale of PSS: The scale developed by Zimet et al. (1988) has three subscales with 12 items, each addressing a different support source: family, friends, and significant other. In the present study, the internal consistency coefficients were calculated as .85 for the whole scale, .85 for the family support subscale, .89 for the friends support subscale, and .92 for the significant other subscale.

Smartphone Cyberloafing Scale in Class (SPCSC): The six-point Likert scale was developed by Blau et al. (2006). The scale consists of three subscales with 16 items: cyberloafing related to browsing, interactive cyberloafing, and cyberloafing for entertainment. In the present study, the internal consistency coefficient of the whole scale was .92, and it was .88 for browsing-related cyberloafing, .86 for interactive cyberloafing, and .64 for entertainment-related cyberloafing.

2.4. Ethical and Data Collection

The ethical permission of the study was obtained from Fırat University Ethics Committee with the decision numbered 2020/11. Then, permission to apply the questionnaire was obtained from the dean of education faculty to apply the questionnaire forms. After receiving the necessary permissions, all participants were informed about the research purpose, and they voluntarily filled out the questionnaire. It took about 15 minutes to complete the questionnaire.

2.5. Data Analysis

SPSS 22 program was used in the analysis of the data. It was observed that the kurtosis and skewness coefficients of the subscales ranged between -1.25 and .98. Kurtosis and skewness coefficients in the range of ± 1.5 mean that the data meet the univariate normality condition (Tabachnick & Fidell, 2013). Then, by calculating the Mahalanobis distance, it was determined whether the multivariate normal distribution was

satisfied or not. The Mahalanobis distance values and the chi-square values were compared (Can, 2017), and the dataset was found to satisfy the multivariate normal distribution ($R^2 = 0.986$; $y = 0.9825x$). On the other hand, Cook's distance was calculated and it was found that all values were below .05 and close to zero.These values also showed that multivariate normality was obtained (Seçer, 2015). Therefore, Pearson correlation analysis was conducted to determine the relationships among teacher candidates' demographic characteristics, PSS, and smartphone cyberloafing during the lecture. In correlations between variables, the Pearson correlation coefficient (r) is considered to be high between .70 and 1.00, moderate between .70 and .30, and low if less than .30 (Büyüköztürk, 2012).

The hierarchical linear regression analysis was used to determine whether teacher candidates' demographic characteristics and PSS positively affect smartphone cyberloafing levels. The assumptions that normal distribution of data, no high-level correlation between independent variables, and no correlation between error terms were checked before regression analysis. Finally, suppose the tolerance value is greater than .10, and the VIF value is less than 10 in the regression analysis. In this case, there is no multicollinearity problem between the variables (see Table 2, Table 3, Table 4, and Table 5), and if the value of Durbin-Watson (dw) is around 2, it means that there is no autocorrelation (Can, 2017).In the hierarchical regression analysis, it was seen that the lowest tolerance value of the variables was .784, the highest VIF value was 1.275, and there was no multicollinearity problem.

3. Results

The relationship among teacher candidates' gender, grade, PSS levels, and smartphone cyberloafing during the lecture was examined to answer the study's first research question. Correlation analysis results are given in Table 1.

Table 1. *The Relationship between Research Variables*

Scale\Subscale\Variable	X	1	2	3	4	5	6	7	8	9	10
(1) Family	5.65	-									
(2) Friends	5.14	.43**	-								
(3) Significant other	4.26	.14**	.22**	-							
(4) Percieved social support	5.02	.65**	.72**	.75**	-						
(5) Browsing-related	2.53	-.23**	-.11*	.10*	-.08	-					
(6) Interactive	2.20	-.21**	-.16**	.06	-.11*	.64**	-				
(7) Entertainment	2.00	-.24**	-.12*	.11*	-.08	.59**	.64**	-			
(8) Smartphone cyberloafing	2.31	-.25**	-.15**	.10*	-.10*	.90**	.89**	.78**	-		
(9) Gender		-.18**	-.03	.01	-.07	.03	.15**	.30**	.14**	-	
(10) Grade		-.03	.03	.12**	.07	.15**	.09	.10*	.13**	.02	-

**p < .01; *p < .05

As seen in Table 1, there was a negative and low relationship between PSS and smartphone cyberloafing (r = -.10; p < .05). According to the subscales, there was a negative and low relationship between PSS and interactive cyberloafing (r = -.11; p < .05), while no significant relationship was found between hovering and recreational cyberloafing (p > .05). There were negative and low relationships between family support and smartphone cyberloafing (r = -.25; p < .01), browsing-related cyberloafing (r = -.23; p < .01), interactive cyberloafing (r = -.21; p < .01), and entertainment cyberloafing (r = -.24; p < .01). There were negative and low relationships between friend support and smartphone cyberloafing (r = -.15; p < .01), browsing-related cyberloafing (r = -.11; p < .01), interactive cyberloafing (r = -.16; p < .01), and entertainment cyberloafing (r = -.12; p < .01). There were positive and low correlations between the significant other and the browsing-related cyberloafing (r = .10; p < .05) and the entertainment cyberloafing (r = .11; p < .05), while there was no meaningful relationship between smartphone cyberloafing and interactive cyberloafing (p > .05).

There were negative and low relationships between gender and familiy support (r = -.18; p < .01), positive and low relationship between gender and interactive cyberloafing (r = .15; p < .01), entertainment cyberloafing (r = .30; p < .01), and smartphone cyberloafing (r = .14; p < .01). But there was no significant relationship between

gender and friends support, significant other, PSS, and browsing-related cyberloafing ($p > .05$). Although there were positive and low relationship between grade and significant other ($r = .12$; $p < .01$), browsing-related cyberloafing ($r = .15$; $p < .01$), entertainment cyberloafing ($r = .10$; $p < .01$), and smartphone cyberloafing ($r = .13$; $p < .01$), there was no significant relationship between grade and family support, friend suppport, PSS, and interactive cyberloafing ($p > .05$).

According to the analyzes, it was revealed that men received less family support, more interactive, entertainment, and smartphone cyberloafing in general than women. In addition, it was observed that as the grade increased, more significant other supports emerged that were more related to browsing, entertainment cyberloafing, and smartphone cyberloafing in general. The hierarchical linear regression analysis was performed to determine whether demographic characteristics and the PSS predicted the teacher candidates' cyberloafing during the lecture. The analysis results are presented in Table 2.

Table 2. *Hierarchical Linear Regression Analysis Results related to Predicting Browsing-Related Cyberloafing*

	Variable	B	se	β	t	p	Tailed r	Partial r
Step 1	Constant	2.163	.171	-	12.680	.000	-	-
	Gender	.071	.105	.03	.681	.496	.031	.030
	Grade	.148	.045	.15	3.279	.001	.146	.146
Step 2	Constant	3.331	.307	-	10.837	.000	-	-
	Gender	-.027	.103	-.01	-.261	.794	-.012	-.011
	Grade	.128	.044	.13	2.904	.004	.130	.125
	Family	-.194	.043	-.22	-4.536	.000	-.201	-.196
	Friends	-.038	.038	-.05	-1.105	.310	-.046	-.044
	Significant other	.068	.025	.12	2.758	.006	.124	.119

	R	R^2	ΔR^2	F	df1	df2	p	d_w
Step 1	.15[a]	.02	.02	5.646	2	494	.004	1.736
Step 2	.29[b]	.09	.07	11.318	3	491	.000	

[a]: Gender, Grade; **[b]:** Gender, Grade, Family, Friends, Significant other; Dependent variable: Browsing-related cyberloafing

When Table 2 is examined, both models tested with hierarchical regression in two steps were significant as a whole. In the first step, demographic variables (gender and grade) and in the second step, PSS subscales (family, friend, and significant other) were included in the analysis. In the first step, the demographic variables included in the model together significantly ($p < .05$) predicted the browsing-related cyberloafing. When the significance of the regression coefficients of each variable was examined, it was seen that grade ($\beta = .15$; $p < .01$) variable significantly predicted browsing-related cyberloafing, but the predictive effect of the gender variable was not significant ($\beta = .03$; $p > .05$). Gender and grade variables together significantly explained about 2% ($\Delta R^2 = .02$; $p < .01$) of browsing-related cyberloafing.

In the second step of the analysis, the model variables obtained by including subscales of PSS (family, friend, and significant other) significantly predicted the browsing-related cyberloafing. When the regression coefficients of each variable in the model are examined, the predictive effects of grade ($\beta = -.13$; $p < .01$), family support ($\beta = -.22$; $p < .01$), and significant other support ($\beta = .12$; $p < .01$) variables on browsing-related cyberloafing were significant, but the predictive effects of gender ($\beta = .01$; $p > .05$) and friends support ($\beta = -.05$; $p > .05$) variables were not. PSS subscales added to the model at this step significantly explain approximately 7% of the model ($\Delta R^2 = .07$; $p < .01$). All the independent variables of the research predicted 9% of browsing-related cyberloafing ($R^2 = .09$). According to the t-test results, grade, family support, and significant other support subscales were meaningful predictors for browsing-related cyberloafing. Still, gender friends support subscales were not a significant predictor.

The hierarchical linear regression analysis results related to predicting the teacher candidates' interactive cyberloafing by PSS and demographic characteristics were presented in Table 3.

Table 3. *Hierarchical Linear Regression Analysis Results related to Predicting Interactive Cyberloafing*

Variable		B	se	β	t	p	Tailed r	Partial r
Step 1	Constant	1.580	.169	-	9.345	.000	-	-
	Gender	.342	.104	.15	3.299	.001	.147	.146
	Grade	.083	.045	.08	1.859	.064	.083	.082
Step 2	Constant	2.643	.307	-	8.615	.000	-	-
	Gender	.272	.103	.12	2.632	.009	118	.114
	Grade	.070	.044	.07	1.585	.114	.071	.069
	Family	-.128	.043	-.15	-3.012	.003	-.135	-.131
	Friends	-.089	.037	-.12	-2.368	.018	-.106	-.103
	Significant other	.056	.025	.10	2.252	.025	.101	.098

	R	R^2	ΔR^2	F	df1	df2	p	d_w
Step 1	.17[a]	.03	.03	7.273	2	494	.001	1.829
Step 2	.28[b]	.08	.05	8.767	3	491	.000	

[a]: Gender, Grade; **[b]:** Gender, Grade, Family, Friends, Significant other; Dependent variable: Interactive cyberloafing

As seen in Table 3, gender and grade variables included in the model in the first step together significantly predicted the interactive cyberloafing model. However, when the significance of the regression coefficients of each variable was examined, gender (β = .15; p < .01) variable significantly predicted interactive cyberloafing, but the predictive effect of the grade variable was not significant(β = .08; p > .05). Gender and grade variables together explain approximately 3% (ΔR^2 = .03; p < .01) of interactive cyberloafing.

Model variables obtained by including subscales of PSS in the analysis in the second step together significantly predicted interactive cyberloafing. However, when looking at the regression coefficients for each variable, gender (β = .12; p < .01), family support (β = -.15; p < .01), friends support (β = -.12; p < .05) and significant other support (β = .10; p < .05) variables significantly predicted interactive cyberloafing, but the predictive effect of grade variable was not significant (β = .07; p > .05). PSS subscales added to the model at this step significantly explain approximately 5% of the model (ΔR^2 = .05; p < .01). All the independent variables of the research predicted 8% of browsing-related cyberloafing (R^2 = .08). When the t-test results were examined, the gender and all three subscales was a meaningful predictor for entertainment cyberloafing.

The hierarchical linear regression analysis results related to predicting the teacher candidates' entertainment cyberloafing by PSS and demographic characteristics were presented in Table 4.

Table 4. *Hierarchical Linear Regression Analysis Results related to Predicting Entertainment Cyberloafing*

	Variable	B	se	β	t	p	Tailed r	Partial r
Step 1	Constant	.952	.153	-	6.221	.000	-	-
	Gender	.647	.094	.29	6.886	.000	.296	.294
	Grade	.093	.040	.10	2.316	.021	.104	.099
Step 2	Constant	1.863	.277	-	6.731	.000	-	-
	Gender	.569	.093	.26	6.117	.000	.266	.255
	Grade	.075	.040	.08	1.898	.058	.085	.079
	Family	-.148	.038	-.18	-3.850	.000	-.171	-.160
	Friends	-.045	.034	-.06	-1.333	.183	-.060	-.055
	Significant other	.069	.022	.13	3.102	.002	.139	.129

	R	R^2	ΔR^2	F	df1	df2	p	d_w
Step 1	.31[a]	.10	.10	26.663	2	494	.000	1.767
Step 2	.39[b]	.15	.05	10.007	3	491	.000	

[a]: Gender, Grade; **[b]:** Gender, Grade, Family, Friends, Significant other; Dependent variable: Entertainment cyberloafing

As seen in Table 4, gender and grade variables included in the first step model significantly predicted the interactive cyberloafing model. When the significance of the regression coefficients of each variable was

examined, gender (β = .29; p < .01) and grade (β = .10; p < .05) variables were significant in predicting entertainment cyberloafing. Gender and grade variables together significantly explain approximately 10% (ΔR^2 = .10; p < .01) of entertainment cyberloafing.

Model variables obtained by including subscales of PSS (family, friends, and significant other) in the analysis in the second step together significantly predicted entertainment cyberloafing. However, when looking at the regression coefficients for each variable, gender variable (β = .26; p < .01), family support (β = -.18; p < .01), and significant other support (β = .13; p < .01) variables significantly predicted entertainment cyberloafing, but the predictive effect of grade (β = .08; p > .05) and friends support (β = -.06; p > .05) was not significant. PSS subscales added to the model at this step significantly explain approximately 5% of the model (ΔR^2 = .05; p < .01). All the independent variables of the research predicted 15% of entertainment cyberloafing (R^2 = .15). When the t-test results were examined, gender, family support, and significant other support subscales were meaningful predictors for entertainment cyberloafing, but grade and friends support subscales were not.

The hierarchical linear regression analysis results related to predicting the teacher candidates' smartphone cyberloafing during the lecture by PSS and demographic characteristics were shown in Table 5.

Table 5. *Hierarchical Linear Regression Analysis Results related to Predicting Smartphone Cyberloafing during the lecture*

	Variable	B	se	β	t	p	Tailed r	Partial r
Step 1	Constant	1.719	.146	-	11.769	.000	-	-
	Gender	.281	.090	.14	3.134	.002	.140	.138
	Grade	.113	.039	.13	2.936	.003	.131	.130
Step 2	Constant	2.800	.262	-	10.697	.000	-	-
	Gender	.197	.088	.10	2.234	.026	.100	.095
	Grade	.096	.037	.11	2.563	.011	.115	.109
	Family	-.161	.036	-.21	-4.423	.000	-.196	-.189
	Friends	-.058	.032	-.09	-1.822	.069	-.082	-.078
	Significant other	.064	.021	.13	3.018	.003	.135	.129
	R	R^2	ΔR^2	F	df1	df2	p	d_w
Step 1	.19[a]	.04	.04	9.374	2	493	.000	1.800
Step 2	.33[b]	.11	.07	13.088	3	490	.000	

[a]: Gender, Grade; **[b]:** Gender, Grade, Family, Friends, Significant other; Dependent variable: Smartphone cyberloafing

As seen in Table 5, first step variables (gender and grade) together predicted the smartphone cyberloafing significantly. According to the significance of the regression coefficients of each variable, gender (β = .14; p < .01) and grade (β = .13; p < .01) variables were significant in predicting smartphone cyberloafing. Gender and grade variables together significantly explain approximately 4% (ΔR^2 = .04; p < .01) of smartphone cyberloafing.

Model variables obtained by including subscales of PSS in the second step analysis significantly predicted the smartphone cyberloafing. According to the regression coefficients of each variable, gender (β = .10; p < .05), grade (β = .11; p < .05), family support (β = -.21; p < .01), and significant other support (β = .13; p < .01) variables significantly predicted the smartphone cyberloafing, but friends support (β = -.09; p > .05) was not significantly predicted. PSS subscales added to the model at the second step significantly explain approximately 7% of the model (ΔR^2 = .07; p < .01). All the independent variables of the research predicted 11% of smartphone cyberloafing (R^2 = .11). When the t-test results were examined, gender, grade, family support, and significant other support subscales were meaningful predictors for smartphone cyberloafing, but the friends support subscale was not.

4. Discussion, Conclusion, and Recommendations

Cyberloafing during the lecture negatively affects the academic success of the students. The teachers have to prevent this type of loaf, and teachers should support students about this wrong behavior by giving practical suggestions and exhibiting correct behaviors. For this reason, this study, which was conducted to determine

how much PSS explains university students' use of smartphones during the lectures, aimed to examine teacher candidates' perspectives.

According to this study's first finding, there was a negative and low relationship between the teacher candidates' PSS and smartphone cyberloafing during the lecture. This finding showed that as teacher candidates' PSS increased, their tendency to make cyberloafing during the class decreased. Studies have also shown that there is a negative relationship between PSS and cyberloafing (Goekçearslan et al., 2018), social media addiction (Bilgin & Taş, 2018), smartphone addiction (Konan & Çelik, 2019), Internet addiction (Esen & Guendoğdu, 2010; Oktan, 2015; Shaw & Gant, 2002; Tanrıverdi, 2012), and digital gambling addiction (Barut, 2019; Yavuz, 2018; Yıldırım, 2019). This finding of the current study is supported by the studies' results in the literature.

According to the results obtained from the study, it was revealed that male teacher candidates received less family support and more interactive, entertainment, and smartphone cyberloafing than females. It can be said that men receive less family support due to the Turkish family structure. Because in the Turkish family structure, the man himself is the source of support (Yapıcı, 2010). The reason why male teacher candidates cyberloaf with smartphones can also be explained by the fact that men are more likely to be addicted to the Internet. This is because according to the meta-analysis study by Su et al. (2020), there are gender differences in certain behaviors/disorders of internet use worldwide, specifically, males show more behaviors related to internet use disorder and social media addiction than females do. Senel et al. (2019) also stated in his study that one of the important predictors of cyberloafing is gender and that men show more cyberloafing behavior, and as a result, it is supported by many studies.

Dursun et al (2018) also emphasized that school grade should be considered as a determinant of cyberloafing status in educational studies dealing with cyberloafing behavior. In this study, it was found that as grade level increased, more significant other support emerged, more browsing-related, entertainment-related cyberloafing, and smartphone cyberloafing in general.It can be interpreted as that they tend to establish relationships with private individuals rather than family and friends. In this study, the reason why university students' smartphone cyberloafing levels tend to increase as college students' grades increase may be because teacher candidates prefer to use the internet to browse their lessons or have fun rather than use the internet to interact with others. In addition, it can be said that upper-grade students are more accustomed to university and classroom environments, and they are more self-confident than a lower grade. Senel et al. (2019) while internet use is an obstacle in front of the learning process with cyberloafing behavior; On the other hand, he stated that he could be a significant supporter. In the study conducted by Akgün (2020), it was revealed that as the grade level increased, the level of cyberloafing in the lessons increased.

According to another result, the PSS is negatively and slightly related to interactive cyberloafing, but not to cyberloafing related to surfing and to cyberloafing related to entertainment. In Gökçearslan et al. (2018) study, it was found that social support has a significant effect on cyberloafing. Kim (2017) revealed that those with high loneliness tend to rely more on smartphone-mediated communication. This finding of the current study coincides with the definition of social support perception as a perception arising from the communication of individuals with each other. Positive interaction is an essential factor in feeling social support. Interactive cyberloafing during lecture, however, is significantly but negatively related to PSS compared to other types of cyberloafing. Students' need to interact with others decreases as their PSS increases. This finding shows that the lecturers' interest or support to the teacher candidates is important for preventing smartphone cyberloafing during the lecture.

After adolescence, the effects of their friends increase in the lives of young people. Adolescents and teens prefer to share their problems with their friends rather than their families, but parents still impact their children. However, friends' influence starts to increase more than families' (Gunuc & Dogan, 2013; Muus, 1980; Rosen, 1965). This study supports these claims. The results showed a negative and low relationship between internet-related cyberloafing, interactive cyberloafing, and entertainment cyberloafing and support from family and friends. According to this finding, it can be said that as the social support that teacher candidates receive from their families or friends increases, their tendency to make smartphone cyberloafing decreases in class or vice versa. It can be said that students, whom their families and friends support, avoid displaying smartphone cyberloafing behaviors that will reduce their motivation and prevent them from understanding

the subjects. This situation can be interpreted as the family's support to teacher candidates can prevent their behavior unrelated to the lecture subject. Gunuc and Doğan (2013) found that adolescents spending time with their mothers have a higher level of PSS and a lower level of internet addiction. Researchers also stated that many activities adolescents carry out with their mothers increase their PSS levels. Dokmen (1994) specified that sharing problems in adolescence and communication within the family in this period is believed to positively influence adolescents' psychology. In the study of Pawlowska et al. (2018), it was observed that digital game addiction was higher among adolescents with communication disorders in the family. Besides, Kwon et al. (2011) also suggested that family relationships are more important in computer game addiction than friend relationships. Hupcey (2000) stated that individuals felt bad before talking to their families, felt happy, and encouraged after talking to their families or receiving support. In Esen and Guendoğdu's (2010) study, adolescents' Internet addiction decreased with increasing support from family and teachers. In the study by Yıldırım (2019), a negative relationship was found between the level of online gaming addiction and perceived social support from family, friends, and teachers. The results of the studies explain the findings of the current study.

It was found that there was a positive and low relationship between significant other support and both entertainment-related cyberloafing and browsing-related cyberloafing. However, there was no meaningful relationship between interactive cyberloafing. Results show that teacher candidates who feel supported by their partner are more likely to engage in cyberloafing while surfing and conversing. In Büyükçolpan's study (2019), there was a positive relationship between nomophobia and significant other supportWhen it comes down to the faculty member, it can be concluded that pre-service teachers tend to be more engaged in scanning data when they need to learn during class or when they feel that teachers provide the necessary support. When teacher candidates are distracted, bored of the lesson, or do not feel the faculty members' support, they mostly do entertainment cyberloafing during the lecture. However, if the significant other is flirt, the teacher candidate wants to communicate with the flirt and waits for her\his support, and she\he can push to talk with her\him during the lesson. Thus, it may cause more cyberloafing behaviors during the lectures. Whoever is evaluated as a significant other can also change the effect of PSS on cyberloafing.

According to another result, the subscales of the PSS together significantly predicted both cyberloafing and the three subscales of cyberloafing. In Mete's (2017) study, the PSS variable significantly predicted university students' internet addiction. In Konan and Çelik's (2018) study, the teacher candidates' social support perceptions predicted their smartphone addiction negatively meaningfully. Gökçearslan et al. (2018) stated that social support has a small but significant impact on cyberloafing. This finding shows that one of the variables explaining smartphone cyberloafing during the lectures is social support.

While the family and significant others subscales of the PSS significantly predicted interactive, browsing-related, and entertainment-related cyberloafing, the friends subscale significantly predicted only interactive cyberloafing. Besides, one of the results is that family and significant others are significant predictors of cyberloafing during the lecture, but friends do not have a significant predictive effect. According to the findings obtained, the most important effect for reducing the cyberloafing of teacher candidates is the support provided by their families. While the level of cyberloafing during the lecture decreases with the support of family and friends, it can increase with the support of significant others. Besides, interactive cyberloafing significantly reduces the perception of support from friends. This may be because the teacher candidates are in the same environment as most of their friends, and their friends provide the necessary support during the lecture.

Esen and Gündoğdu (2010) suggested that when students perceive their families' support as more important than others, they can protect themselves more easily from the damage caused by digitalization. Teacher candidates' belief that they will get support from their families when they need it may also lead to a significant decrease in undesirable behaviors such as smartphone surfing during lectures.Drouin and Landgraff (2012) stated that today, youngs continue their romantic relationships through messaging and can meet their needs of interest and love with the texts and pictures they send to each other. Büyükçolpan (2019) stated that dating relationships can affect university students' smartphone use and that smartphones are used to meet the daily communication needs of those distant from each other. This finding showed that teacher candidates use their smartphones to reach different supports for different purposes during the lecture.

As a result, PSS is also stated as satisfaction from the social relationship (Kaya et al., 2015). As understood from this definition, it can be said that PSS is one of the important factors shaping the individual's behaviour. Teacher candidates' perception of faculty members as a source of social support and establishing strong social relationships can positively affect smartphone cyberloafing during the classroom environment. Haşimoğlu and Aslandoğan (2018) found that students who engage in cyberloafing in their classes are supported by teachers, and that the self-esteem of students who do not feel the support of teachers and are exposed to violence could be damaged. According to Dirik (2016), virtual media addictions (such as smartphones and social media) of students whose self-confidence decreases increases, reflected during the lecture. Martinez et al. (2011) stated that with the decrease in teacher support, students' problematic behaviors increased, and in Altunbaş's (2002) study, the support perceived by teachers motivated and encouraged students. Gökçearslan et al. (2018) stated that poorly planned classes and problems related to campus life might also cause cyberloafing.

As a result of this study, family and friend support have negative relationships with cyberloafing during the lectures while significant other has a positive relationship. According to another result, social support, perceived by the family, significantly predicts the smartphone cyberloafing in the lecture and has a preventive effect. On the contrary, the individuals who perceive social support from significant others have an increased tendency to make cyberloafing in the classes. Perceived social support from friends also significantly predicts interactive cyberloafing. Parents' trust in teacher candidates and the feeling that they are helping them when they are stressed may lead them to focus more on lectures. Thus, individuals who limit their smartphone cyberloafing behavior can be expected to use their smartphones for educational purposes. This study showed that the social support that teacher candidates perceived from their families could reduce their cyberloafing during the lecture. The communication established in the family positively affects the psychology and development of the individual, and the social support from the families may reduce many destructive behaviors of the students, including cyberloafing during the lecture. That's why it's important to be aware of family support to prevent cyberloafing on smartphones in the class. In this respect, it is undeniable that the time spent with parents and family is vital in preventing smartphone cyberloafing, as with many addictions. In this context, families must engage in various activities with teacher candidates. With the transition to university, the influence of the family on the individual begins to be replaced by friends. However, the influence of families never completely disappears.

For this reason, families should guide their children to use smartphones even when they are away from them. In this case, prospective teachers will use their smartphones more healthily and accurately. They will be able to make practical suggestions about using many technological tools, including smartphones, to the students they will train in their professional lives.

Since those who continue their education in provinces far from their families are far from family control, it is possible that these teacher candidates will be adversely affected by some people and use smartphones in lectures. In this case, universities and national education directorates have various duties regarding teacher candidates' effective and correct use of smartphones. For this, universities and national education directorates should organize seminars or informative meetings on how important their social support is to students. Educational institutions should develop policies that involve families at every stage of education, and decisions should be taken by providing support from experts, institutions, or organizations on problematic issues. Also, various activities should be organized to provide teacher candidates with competencies related to practical use and prevention of misuse of technologies such as smartphones and the internet.

In the study, data were collected using scales and it was found that the level of cyberloafing during lecture decreased with the support of family and friends. At the same time, it increased with the support of a significant other. The significant other in the scale items could also be the fiancé, flirt, neighbor, doctor, or teacher of the teacher candidates. In this context, it is important for the interpretation of the study results to know which person the teachers are referring to in the concept of significant other. Therefore, in order to increase the validity of this study result, qualitative studies can be conducted in which the opinion of teacher candidates is obtained and mixed studies in which qualitative and quantitative data are collected together.The study was conducted only with students from a university of education at a particular university. In order to increase the generalizability of the study results, the opinions of students at other universities should be obtained.

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The Effect of School Principals' Ethical Leadership on Teacher Job Satisfaction: The Mediating Role of School Ethical Climate

Ramazan CANSOY[1], Hanifi PARLAR[2], M. Emin TÜRKOĞLU[3]

[1]*Karabük University, Karabük, Turkey* *0000-0003-0211-2009*

[2]*Istanbul Commerce University, Istanbul, Turkey* *0000-0002-6313-6955*

[3]*Afyon Kocatepe University, Afyonkarahisar, Turkey* *0000-0003-3883-3414*

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ABSTRACT

This study aims to examine the mediating role of ethical climate in the relationship between ethical leadership and job satisfaction. A cross-sectional survey was conducted for the study. Questionnaires were distributed to 641 teachers in Turkey. Regression analysis was conducted to determine the mediating effect of ethical climate. Bootstrapping tehchnique was used to test the hypotheses and the effects of mediation. Our results show that there is a positive relationship between principals' ethical leadership and teachers' job satisfaction and a positive relationship between ethical leadership and ethical climate. In addition, ethical climate partially mediated the relationship between ethical leadership and job satisfaction. Schools should focus on ethical leadership practices in the workplace. The study enriched the understanding of the factors that influence the relationship between ethical leadership, ethical climate and job satisfaction.

Keywords:
Ethical leadership, ethical school climate, job satisfaction, ethical climate

1. Introduction

Issues such as corruption, favoritism, and nepotism have long been mostly criticized as unethical (Balcı et al., 2012; Erdem, Aytaç & Goenuel, 2020; Shekhawat, 2019), and especially in developing countries, these issues have revealed the need for ethical leaders in educational organizations (Shareef & Atan, 2019).Ethical leaders, as moral managers (Treviño, Brown & Hartman, 2003), have a reputation for being fair and principled, and they promote ethical behaviour at work. They also set and communicate ethical standards (Brown & Mitchell, 2010). Recent literature has shown that ethical leadership influences employee attitudes and behaviours (e.g., Chughtai, Byrne & Flood, 2015; Ren & Chadee, 2017), suggesting that ethical leaders play a significant role in ensuring job satisfaction (Kim & Brymer, 2011). Job satisfaction is seen as a practical way to encourage employees to work for the organisation's success (Puni, Mohammed & Asamoah, 2018).

In some studies conducted in the last 20 years, it is stated that the main reason for the crisis in education is the low job satisfaction of teachers (Crisci, Sepe, & Malafronte, 2019; Crossman & Harris, 2006). With the gradually decreasing job satisfaction, many teachers are leaving the profession (Crossman & Harris, 2006; Whaley, 1994). There are several reasons for low job satisfaction. It is argued that rather than focusing on the problems that arise from the school environment, one should focus on the problems that arise in the school itself (Crisci et al., 2019).

[1]Corresponding author's address: Istanbul Commerce University, Istanbul, Turkey
e-mail: hanifiparlar@gmail.com
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We have some justifications for this research. Firstly, ethical leadership plays an important role in terms of work outcomes (Freire & Bettencourt, 2020). Secondly, there are few quantitavie research on the mediating effect of ethical climate (Bedi, Alpaslan & Green, 2016; Demirtas & Akdogan, 2015; Lu & Lin, 2014; Newman et al., 2017; Shin et al., 2015). Moreover, ethical leadership has been discussed intensely for the last 10 years may be the emergence of leadership behaviors that prevent trust, commitment, and solidarity in many organizations (Şişman, 2011). In this context, ethical leaderhip cannot be isolated from these behaviors in schools. However, the research on the ethical climate as a mediator in the relationship between ethical leadership and job satisfaction are limited (Ahmad & Umrani Waheed, 2019; Freire & Bettencourt, 2020). Thirdly, "Distributed leadership, instructional leadership, teacher leadership, and transformational leadership" is one of the most studied leadership models in the field of EDLM (Gumus et al., 2018, p.1). Therefore, identifying the variables that affect the practices of an ethical leadership model in schools can expand knowledge for practitioners and EDLM researchers. Fourthly, revealing through which mediators the leadership influences the behaviors of the employees may contribute to the strengthening of the theoretical framework (Simkins, 2005). Lastly, researchers in the field of educational administration have stated for many years that the context of the school has an impact on leadership and its results and that this issue should be examined (Dimmock and Walker, 2000; Hallinger, 2018). In addition, in recent years, many researchers have focused on research in this area, especially with the thought that leadership will have different applications in different cultures (eg., Gümüş et al., 2021; Qian et al., 2017). Therefore, this study aims to (i) what extent is school principals' ethical leadership related to teacher job satisfaction?, (ii) what extent does school ethical climate mediate the effects of school principals'ethical leadership on teacher job satisfaction?

1.1. Theoretical Foundation

1.1.1. Job satisfaction

Managers need employees who will make a critical difference in their organizations. Similarly, organizations expect their employees to be dedicated. So, what makes employees engaged in their job emerges as a significant question in organizations (Bakker & Schaufeli, 2008). Leaders and employees who make up the human capital are crucial for the effectiveness of an organization. Thus, one reason for employee outcomes that has drawn the attention of organizational researchers is job satisfaction (Puni, Mohammed & Asamoah, 2018, p. 525).

Job satisfaction can be defined as "the pleasurable emotional state resulting from the appraisal that one's work achieves or promotes one's vocational values" (Locke, 1969, p. 317) or an emotional response to one's work associated with the employee's comparison of significant outcomes with expected outcomes (Cranny, Smith & Stone, 1992).Job satisfaction is seen as a practical way to encourage employees to work for the organisation's success (Puni, Mohammed & Asamoah, 2018). Many factors affect employees' job satisfaction (Crossman & Harris, 2006), involving both intrinsic and extrinsic job satisfaction (Spector, 1997). Intrinsic satisfaction elements such as the job's content, autonomy, responsibility and achievement come from the job itself. On the other hand, extrinsic satisfaction elements such as the salary, company policies, job security, and the relationship with other employees and managers refer to the organizational environment (Herzberg, Snyderman & Mausner, 1966; Misener et al., 1996).

Research on job satisfaction stems from Herzberg's motivation-hygiene theory (Bogler, 2001; Dinham & Scott, 1998). According to the traditional understanding, individuals in an organization are either satisfied or dissatisfied with their jobs. In an organization where hygiene factors (extrinsic satisfaction elements) are present, employees do not experience dissatisfaction, i.e., there is no dissatisfaction. However, this does not create satisfaction among employees. Therefore, other motivational factors (intrinsic satisfaction elements) should be provided to achieve job satisfaction (Griffin & Moorhead, 2014; Kinicki et al., 2010).

1.1.2. Ethical Leadership

Ethical leadership is defined as "the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making." (Brown, Treviño & Harrison, 2005, p. 120). The leader's character and virtue ethics are indicative in ethical leadership (Knights & O'Leary, 2006). Ethical leadership is characterized by different attributes that refer to character integrity, ethical accountability, ethical

awareness, motivating others and making ethical decisions to influence others (Resick et al., 2006). The attributes of a moral person (e.g., integrity, honesty, trustworthiness) and a moral manager (e.g., being a role model through visible actions) are pillars of ethical leadership. Thus, ethical leaders influence employees by displaying these attributes (Treviño, Hartman & Brown, 2000).

Social learning theory explains the influence of ethical leadership on employees. When ethical leaders become role models, employees learn behaviors that are expected. Reward and punishment perceptions cause a vicarious experience by observing others' behaviors (Bandura, 1977; Brown, Treviño & Harrison, 2005; Treviño, Hartman & Brown, 2000). Ethical leaders influence their followers by using transactional efforts (e.g., punishing, rewarding or focusing on ethical rules and standards) (Brown & Treviño, 2006; Mayer et al., 2009). On the other hand, ethical leaders may affect the employees through socioemotional exchange. This exchange focuses on mutual support and friendship due to ethical behaviors (Mayer et al., 2009).

1.1.3. Ethical climate

The work climate of an organization is a psychological environment in which common practices and procedures are shared. An organization has different work climates, such as leadership, creativity and the display of individual differences (Schneider, 1975). The ethical climate is a constituent of organizational work climate (Simha & Cullen, 2012). The ethical climate is defined as follows: "The prevailing perceptions of typical organizational practices and procedures that have ethical content constitute the ethical work climate" (Victor & Cullen, 1988, p. 101). This definition focuses on ethical implications and organizational norms that affect the organizational practices of employees. Although there are various ethical climate frameworks (e.g., Mayer, Kuenzi & Greenbaum, 2010; Olson, 1995; Schwepker, 2013), Victor & Cullen (1988)'s framework has been widely used to measure ethical climate (Newman et al., 2017).

The types of Ethical climate originate from the intersections of theoretical dimensions that include individual, local and cosmopolitan, egoism, benevolence and principle. The ethical climate framework consists of five sub-types including instrumental, caring, independence, law and code, and rules (Newman et al., 2017; Simha & Cullen, 2012; Victor & Cullen, 1988).A caring climate highlights the best for everyone in an organization and concerns for the good of others, certain interest in others' well-being and working efficiently. An instrumental climate encourages decision making by considering organizational and individual interests. An independence climate is associated with personal moral beliefs, making all decisions, and acting on personal convictions. A law and code climate is related to compliance with laws, rules, and policies established by organizations. The legal and professional standards are expected to be followed by employees. A rules climate is associated with an organization's specific rules and procedures that employees must obey strictly.

Research has shown that ethical climate may be a mediator between leadership and management practices (e.g., leader behaviors, leadership styles, management practices) and work attitudes (e.g., organizational commitment, turnover intention, job satisfaction, etc.) (Newman et al., 2017; Simha & Cullen, 2012).Most researchers have explained ethical climate development and influence on work outcomes with social learning and identity theories. On the other hand, institutional theory, trait-activation theory and situational strength theory have been studied to understand ethical climates in depth (Newman et al., 2017).

1.1.4. School principals' ethical leadership, school ethical organizational climate and job satisfaction

Leaders may impact the organizational climate by using ethical values, setting examples, establishing ethical conducts, communicating ethical behaviors and rewarding ethical behaviour (Grojean et al., 2004). Ethical leaders shape organizational culture by being a role model based on their assigned role (Brown, Treviño & Harrison, 2005; Vera & Crossan, 2004). Employees usually accept ethical leaders' behaviors, policies and practices since they are legitimate authorities. A legitimate authority figure justifies ethical or unethical actions (Brief et al., 2000). Therefore, justification may be espoused or suppressed by leaders' behaviors. Employees can learn desired or undesired behaviors and behave in an ethical or unethical fashion (Dickson et al., 2001). Thereby, ethical leaders' behaviors are likely to be perceived as an antecedent of ethical climate.

Ethical leadership particularly involves consistent ethical conduct. Consideration for others, fair treatment, honesty, equity and justice are basic ethical conducts (Brown & Treviño, 2006; Brown, Treviño & Harrison, 2005). These basic conducts may affect employees' well-being and attitudes. Also, applying procedural, interpersonal and distributive fairness behaviors of ethical leadership may ensure employees' satisfaction

(Stouten, van Dijke & De Cremer, 2012). Moreover, ethical leaders balance work design, workload and authoritarian behaviors (Stouten et al., 2010). If employees think that their managers protect their rights, they may be satisfied with their jobs (Dirks & Ferrin, 2002). As a result, ethical communication standards, accountability, decision -making, and justice in an organization may provide mutual respect and trust. Given that ethical leaders focus on ethical work environments, employees are satisfied with their work.

Organizations should ensure legitimacy by adhering to rules and norms which provide that the organization is based on desirable institutional frameworks (Suchman, 1995). Employees shape their behaviors according to the rules in the workplace. As a result of their social learning in the work environment, employees make some inferences and display attitudes suitable for the social environment (Boekhorst, 2015). On the other hand, a person shows their traits when they face situational cues related to their traits which might originate from the organization. Therefore, these cues may activate a person's traits (Dawkins et al., 2017). The mentioned explanations give us significant clues on how these underlying processes in an ethical climate can directly and indirectly lead to job satisfaction.

1.2. Conceptual Framework

Based on our theoretical foundation, we developed our conceptual model (see Fig.1). We proposed that: (i) there is a significant relationship between school principals' ethical leadership and teacher job satisfaction, and (ii) the effect of ethical leadership on job satisfaction is mediated by ethical climate. We tried to understand the effect of ethical leadership on different organizational outcomes due to a lack of new studies (e.g., Brown & Treviño, 2006; Demirtas & Akdogan, 2015; Freire & Bettencourt, 2020; Ren & Chadee, 2017; Stouten, van Dijke & De Cremer, 2012). On the other hand, ethical leadership's crucial role in employees' core job characteristics has been revealed in different studies (Hartog, 2015; Piccolo et al., 2010).

In our study, we proposed a partial mediation model. Therefore, we included ethical climate, which is a contextual moderator in the model. There is support in the literature for the mediating role of the ethical climate (Demirtas & Akdogan, 2015; Kalshoven, Den Hartog & De Hoogh, 2013; Mayer, Kuenzi & Greenbaum, 2010; Newman et al., 2017). For example, a review study by Newman et al. (2017) found that ethical climate is a mediating variable. Based on our conceptual framework, the ethical climate is a mediator between ethical leadership and job satisfaction.

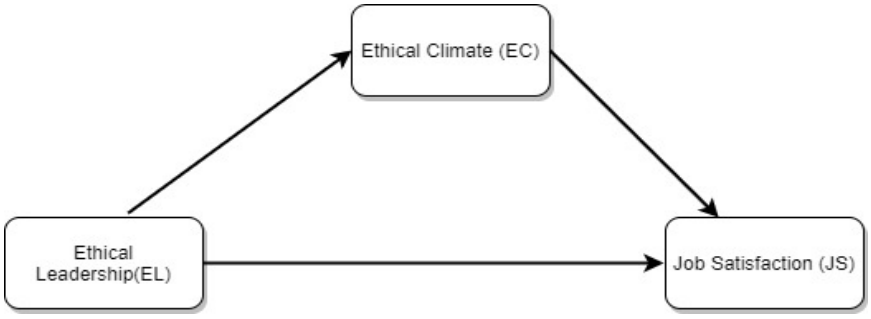

Figure 1. *Conceptual Framework of Relationship among School Principals' Ethical Leadership, School Ethical Climate and Teachers' Job Satisfaction*.

2. Methodology

We conducted a cross-sectional survey design to examine the relationships among school principals' ethical leadership, school ethical climate and teachers' job satisfaction.

2.1. Research Sample

This questionnaire was applied to 641 volunteer teachers in different primary, secondary and high schools in Istanbul by convenient sampling from Çekmeköy, İstanbul. There are 198165 teachers in Istanbul and 1806 teachers in Çekmeköy. One thousand questionnaires were delivered to schools and there was a response rate of 64.1%. Of those who responded, 67% of teachers were females, and 33% of teachers were males. Further statistics show that 26% of these teachers work in elementary schools, 33% work in secondary schools and 41% work in high schools. 38% of these teachers have professional seniority of 2 to 9 years. 5% of teachers have less than 1 year of seniority, 11% have 2-4 years, 27% have 5-9 years, 27% have 10-15 years, and 30% have 15 years.

2.2. Data Collection Tools and Procedure

We used three survey scales in our study. These are the Ethical Leadership scale, the Ethical Climate scale and the Job Satisfaction scale. We have explained the scales in the following sections.

Measurement of Ethical Leadership. The Ethical Leadership scale was developed by Yılmaz (2006) to evaluate teachers' perceptions regarding the ethical behaviour of school principals. The scale consists of 44 items and 4 dimensions. The dimensions are *communicative ethic (fair, caring, compassionate and compassionate in communication with people) , climatic ethic (encouraging teachers and applying school rules fairly), ethical decision making (Being objective in your decisions and valuing the opinions of others) and behavioral ethic (being righteous and protecting the public interest)* (Yılmaz, 2006). The scale uses a 6-point Likert-type rating. It ranges from (1) "Strongly disagree" to (6) "Strongly agree". Some researchers argue that the scale could be used in a different Likert type instead of the original Likert rating (Turan, Şimşek & Aslan, 2015).

Confirmatory Factor Analysis (CFA) was performed to test the fit of this scale structure with the data in the present study. The five-factor structure with 44 items could not be confirmed in the analysis, although we modified the model and removed items (χ2/df = 6.10; RMSEA = .09; GFI = .66; CFI = .85). Then, Exploratory Factor Analysis (EFA) was carried out to evaluate structural validity. The Kaiser-Meyer-Olkin (KMO) value was found to be .98 and the Bartlett test of sphericity was significant (χ2= 30375,50 *p*:0.00). The EFA revealed a single factor. Three items were removed since they decreased the reliability of the scale. Some items had the same factor loading in the sub-dimensions, and the scale consisted of 41 items with a single dimension in the research sample. The ethical leadership scale explained 64.28% of variance by Varimax rotation. The factor loadings of the items were between .70 and .85. The Cronbach's alpha coefficient for the scale was .99. With the change of the sample, the number of dimensions in the scales may change because of cultural change. Many examples of this can be seen in the literature (Erkuş and Selvi, 2019; Maslowski, 2006).

Measurement of Ethical Climate. The Ethical Climate scale was developed by Cullen, Parboteeah & Victor (2003) and adapted to Turkish by Özen and Durkan (2016) for education organizations. The scale refers to the values, practices, behaviours and moral attitudes in an organization. The adapted scale consisted of 22 items and five sub-dimensions, and the scale was rated using a 5-point -Likert-type rating, ranging from (1) "Strongly disagree" to (5) "Strongly agree". The sub-dimensions of the scale are *caring, law and code, instrumental, independence,* and *rules (*Özen & Durkan, 2016*).*

CFA was performed to test the fit of this scale with the current data. However, the fit indices did not confirm the five-dimensional structure of the data of the present study, although we modified the model and removed items (χ2/df = 5.20; RMSEA = .08; GFI = .85;CFI = .90). Four items were removed since the reliability of all items in the *instrumental* factor was smaller than .70. Thus, the fit indices confirmed a four-dimensional structure of the data of the present study (χ2/df = 4.15; RMSEA = .07; GFI = .91; CFI = .95). The sub-dimensions are *caring, law and code, independence,* and *rules.* The Cronbach's alpha coefficient for the overall scale was .92. The sub-dimension reliabilities were as follows: caring .91, law and code .85, independence .82, and rules .82. The factor loadings of the items were between .66 and .82.

Measurement of Job Satisfaction. The Job Diagnostic Survey was developed by Hackman & Oldham (1975) and adapted to Turkish by Silah (2002) for educational organizations. The adapted scale consisted of 14 items and one dimension and it was rated in a 5-point Likert-type scale ranging from (1) "Strongly disagree" to (5) "Strongly agree". CFA was performed to test the fit of the scale with the current data. The fit indices did not confirm the five-dimensional structure of the data of the present study, although we modified the model and removed items (χ2/df = 19.62; RMSEA = .17; GFI = .70; CFI = .59). Then, EFA was carried out to evaluate structural validity. The Kaiser-Meyer-Olkin (KMO) value was found to be .92 and the Bartlett test of sphericity was significant (χ2= 3509.50, p:0.00). The EFA revealed a single factor. Five items were removed since they decreased the reliability of the scale and had low factor loadings. The scale consisted of 9 items and only one dimension in the research sample. The job satisfaction scale explained 60.03% of variance by Varimax rotation. The factor loadings of the items were between .70 and .83. The Cronbach's alpha coefficient for the scale was .91.

2.3. Data Analysis

We tested the hypotheses and the effects of mediation by using PROCESS 3.3 for SPSS. PROCESS allows analyzing the statistical significance of direct and indirect effects by bootstrapping with a confidence interval (CI) (Hayes, 2017). Bootstrapping uses a random sampling method with replacement. This analysis can correct bias or skewness. It is assigned to measure accuracy (Efron & Tibshirani, 1993). If the bootstrapping results are significant in the indirect effect, in other words, if a confidence interval of 95% does not include zero (0), it shows the significance of the indirect effect among the variables (Hayes, 2017). On the other hand, we used the Sobel test to see the partial mediator role of ethical climate.

The data showed skewness values between -1.52 and -.83 and kurtosis values between 2.54 and -.57. The Q-Q plot, mean and median were checked for normality. Mean and median values were close to each other. The Q-Q plot showed that a few values showed deviation. Based on these results, the data were normally distributed. Skewness and kurtosis values ranged between +2 and -2 and showed normal distribution (Tabachnick & Fidell, 2013)

3. Findings

We showed means, standard deviations and relationships between ethical leadership, school ethical climate and teachers' job satisfaction. Table 1 shows the relationships between school principals' ethical leadership, school ethical climate and teachers' job satisfaction.

Table 1. *Relationships between School Principals'Ethical Leadership, School Ethical Climate and Teachers' Job Satisfaction*

		$\overline{X}$	SD	1	2a	2b	2c	2d	3	4
1-Ethical Leadership		5.15	.86	1	.54**	.33**	.47**	.54**	.65**	.53**
	2a-Caring	4.10	.75		1	.72**	.58**	.66**	.87**	,55**
2-Ethical	2b-Law and codes	4.38	.67			1	.44**	.60**	.79**	,46**
climate types	2c-Independence	3.63	.94				1	.64**	.82**	,41**
	2d-Rules	4.16	.74					1	.86**	,51**
3-Ethical Climate (overall)		4.07	.65						1	.57**
4-Job satisfaction		3.91	.82							1

** $p < .01$

The mean of school principals' ethical leadership was relatively high on the 6-point Likert-type scale (5.15). Overall school ethical climate was relatively high on the 5-point Likert-type scale (4.07), and teachers' job satisfaction was (3.91). The means of three sub-dimensions of ethical climate were high on the 5-point Likert-type scale: caring (4.10), law and codes (4.38), and rules (4.16), but independence was relatively low (3.63), and the means are all above the midpoint of the Likert scale.

The correlations between principals' ethical leadership and teachers' job satisfaction (r=.53) and between overall ethical climate and teachers' job satisfaction (r=.57, p <.01) were lower than the correlation between ethical leadership and ethical climate (r=.65). The correlation between the variables was positive and significant at the .01 level. The sub-dimensions of ethical climate correlated with ethical leadership and job satisfaction at a moderate level (r=.33 and r=.55, respectively, p <.01).After the correlation analysis, regression testing was conducted to find the mediation of ethical climate (Table 2). While testing the mediation effect of the Ethical Climate, it was evaluated over the total score because the high correlation of the sub-dimensions with the total ethical climate score was considered a clue that it measures a single construct (see table 1).

Ethical leadership predicted job satisfaction positively and significantly (β = .618, p < .05), and explained 43% of the variance in job satisfaction (Step 1). Ethical leadership predicted ethical climate positively and significantly (β = .413, p < .05), and explained 30% of the variance in ethical climate (Step 2). Ethical climate predicted job satisfaction positively and significantly (β = .389, p < .05) (Step 3). This suggests that when principals use more ethical leadership practices, the ethical climate is better perceived and teachers are likely to have higher job satisfaction.Ethical leadership and ethical climate explained together 50% of the variance in job satisfaction. The analysis revealed that when controlling for the mediator (ethical climate), ethical leadership predicted job satisfaction (β = .457, p < .05) (Step 4). In other words, the variance value of 43% which

directly explained teachers' job satisfaction in the model went up to 50% with an ethical climate included in the model.

Table 2. *Results for Mediation Model*

Step	Independent variables	*Dependent variables*	Coefficients *B*	Standard Error	*t-test*	*p*	*CI 95% LLCI*	*CI 95% ULCI*	R^2
Step 1 (Total) (c)	Ethical leadership	Job satisfaction	.618	.028	21.83	.000	*.563*	*.674*	*.43*
Step 2 (a)	Ethical leadership	Ethical climate	.413	.025	16.55	.000	*.364*	.462	.30
Step 3 (b)	Ethical climate	Job satisfaction	.389	.042	9.25	.000	*.307*	*.472*	*.50*
Step 4 (c')	Ethical leadership	Job satisfaction	.457	.031	14.37	*.000*	*.394*	*.519*	-

The total effect of ethical leadership on teachers' job satisfaction was .618 (c). If the ethical climate was added to the model this effect decreased to .457 (c') and the regression coefficient was significant (Figure 2).

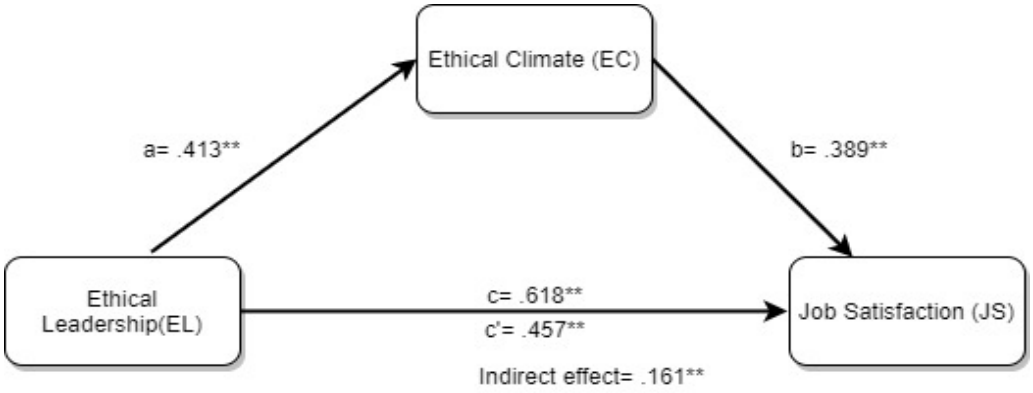

Figure 2. *Model Results*

We examined the indirect mediator role of ethical climate by the bootstrapping test that considers the 95% confidence interval. 5000 bootstrapped samples were applied to the sampling. Thus, the effect of school principals' ethical leadership on teachers' job satisfaction was complementary and partially mediated by the ethical climate (β = .161, 95% CI [.1142, 2179], p <.01). Also, the Sobel test was conducted. This test confirmed the mediator role of ethical climate (z= 8.07, p < .05). This means that more ethical leadership practices increase ethical climate moderately, and consequently, ethical climate increases job satisfaction.

Table 3. *Bootstrapping Results for Mediation Models of Ethical Leadership and Job Satisfaction*

	Effect	BootSE	BootLLCI/BootULCI	Mediator role
Direct effect	.457	.0318	.3949 - .5199	Partial mediator
Indirect effect	.161	.0268	.1126 - .2164	
Total effect	.618	.0283	.5631 - .6743	

4. Conclusion and Discussion

4.1. Limitations of the Study and Future Research

The findings of our study have several limitations. First, we note that our scales were based on self-assessment and subjective perceptions of participants. For future studies, we want to emphasize the need to collect data from participating teachers and school principals. Second, as far as we know, our study is one of the few studies to examine the relationships between ethical leadership, ethical climate and job satisfaction. Our findings need further research analyzing ethical leadership and ethical climate in other contexts to provide substantial implications. Third, our findings reveal the mediation of ethical climate in the relationship between

ethical leadership and job satisfaction. We think it is important to consider the possibility that there may be different mediators in this relationship.

For this reason, future research should focus on hidden mediators in the direct effect between ethical leadership and job satisfaction (Freire & Bettencourt, 2020). Besides, to understand the effect of ethical climate on work outcomes, we recommend new empirical studies. Fourth, our population in the study included 641 volunteer teachers from different primary, secondary and high schools in Istanbul. Finally, our findings cannot be generalized because they were analyzed in the Turkish context and culture.

4.2. Interpretation of Findings

In our study, we examined the antecedent factors that might increase teacher job satisfaction. This study illustrated how ethical leadership affected teacher job satisfaction directly and indirectly by ethical climate as a mediator.

First, the findings of this study revealed that ethical leadership was compelling for strengthening teachers' job satisfaction. This means that teachers experience more satisfaction in their schools when they perceive higher ethical leadership. It can be stated that school principals being reliable people, treating teachers fairly and accepting them without prejudice positively affect teachers' perceptions of their own work. Second, the results confirmed that ethical leadership positively affected the ethical climate. This suggests that ethical leadership has a significant and determining role in shaping school ethical climate. School principals' ethical leadership qualities such as honesty, fairness, rewarding and supporting teachers may nurture and foster ethical climate. The ethical leader is a role model for his/her followers regarding normative behavior and desirable outcomes for an organization (Sharma, Agrawal & Khandelwal, 2019). Our findings align with previous studies conducted in different public sectors (Ahmad & Umrani Waheed, 2019; Freire & Bettencourt, 2020; Huhtala et al., 2013). Trust and support in the relationship between leader and employee produce benefits for the organization reciprocally (Bedi, Alpaslan & Green, 2016). The school principal as an ethical leader influences followers' emotional states and creates the conditions for an ethical context. Third, in our study ethical climate in school is positively associated with teacher job satisfaction. This suggests that teacher job satisfaction increases when ethical climate fosters ethical values, practices, behaviors and attitudes. The elimination of uncertainty in an organization by adhering to rules and norms can contribute to a more satisfactory environment for employees. Moreover, if a situation in an organization activates a person's traits, they would work more effectively. Also, strong situations in an organization might reveal some positive features (Newman et al., 2017).

Fourth, this study revealed that ethical climate mediated the relationship between ethical leadership and teacher job satisfaction. When school principals show the attributes of a moral person and a moral manager, such as being a good role model and communicating values, the school climate is better constituted to have an ethical climate. When teachers sense an ethical climate in the school, they are likely to be satisfied with their work. The mediating role of ethical climate contributes to studies of effective leadership (Brown & Treviño, 2006). Moreover, the mediating effect of ethical climate in the relationship between ethical leadership and job satisfaction is a new finding in the literature.A previous study found the need to understand the mediating effect of ethical climate on work attitudes (Newman et al., 2017). This study contributed to the understanding of ethical leadership, which has been described as having "immense potential for new academic scholars" in various organizations (Sharma, Agrawal & Khandelwal, 2019, p. 727).This study found that ethical leadership increases teachers' job satisfaction directly and indirectly by strengthening the ethical climate. Both the leadership behaviors and the climate in the school are important for the job satisfaction of the individuals. Teachers who do not trust their leader in the school and believe that there is no moral climate can only try to do as much as they are asked. For example, it is difficult to measure the climate in the school, but the climate in the school can be observed by observing the behavior of individuals. School is a space where individuals share different values, norms and symbols. Individuals influence each other verbally or nonverbally. The leader of the school is in sight and the teachers follow their principal. They share their thoughts about their school principals among themselves. In this respect, the biased and unfair behavior of the school principal may negatively affect the teachers and the moral values and norms in the school.

In an environment where people do not believe in themselves and do not share common moral truths, individuals' cynical behavior may increase, their motivation for work and commitment to school may decrease

over time. Turkey is a country where collectivist values and solidarity are strong. In such an environment, unethical leadership behaviors and the school environment may affect teachers' trust in their school leaders more than in other societies.

Our findings support the idea that, due to the detailed bureaucratic structures of educational organizations and their central affiliation with the national Ministry of Education, fixed rules and norms might create an ethical climate. However, our results show that among the sub-dimensions of ethical climate, the independence dimension is lower than the other dimensions. This reinforces the view that ethical climate is focused on external control.

4.3. Conclusion

Our study contributes to research by examining how ethical leaders in educational organizations can influence job satisfaction. Our findings provide empirical evidence that ethical leadership and ethical climate can play a critical role in ensuring job satisfaction. Aldridge & Fraser (2016, p. 303) find that teachers are more energetic and determined to support student learning due to their job satisfaction, which increases the importance of school. Therefore, our findings suggest that ethical leadership and ethical climate are critical factors that strengthen schools as educational organizations. Teacher job satisfaction is an effective factor in student learning (Banerjee et al., 2017) and is related to various work attitudes such as greater willingness to innovate in the classroom (Palardy & Rumberger, 2008).

This study has several implications. Our findings indicate that ethical leadership is a significant predictor of both job satisfaction and ethical climate. Therefore, the organization should focus on ethical leadership practices in the workplace. For this reason, effective training programs on ethical leadership should be conducted regularly.

Our study found that ethical climate is a crucial variable in the relationship between ethical leadership and job satisfaction and educational institutions should focus on how to create ethical climate. Caring, rules, independence, laws and codes are very important to promote ethical climate. To strengthen and promote this climate in an organization, school leaders can emphasize open communication about ethical issues and create ethical awareness. In addition, rules and procedures can be explained to teachers in advance.

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Links Between Disadvantage and Educational Achievement in a Low-income Urban Setting in Bangalore, India

Arshia CHATTERJEE[1], Stephanie BURNS[2]

[1]*Queen's University Belfast, School of Psychology, Northern Ireland, UK* *0000-0003-0656-9217*

[2]*Queen's University Belfast, School of Psychology, Northern Ireland, UK* *0000-0001-7482-7316*

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ABSTRACT

This study focused on the experiences that contributed to the academic achievement of students in disadvantaged settings in India. In India, young people in disadvantaged neighbourhoods are at higher risk of underachievement and dropping out of school. However, some of them achieve highly despite their adverse circumstances and experience. Through interviews with 12 high achievers and their school principal, this study explored the perceived factors that contributed to their academic achievement. Data were analyzed using interpretative phenomenological analysis, and findings indicate a combination of protective factors at different levels – individual, family, school, and community – that contribute to resilience and achievement. The supportive relationships that these adolescents have at the different levels contribute to their achievement directly and indirectly. The findings are discussed in relation to theory with future considerations for Indian-centred research that can inform interventions in disadvantaged and low-income urban communities.

Keywords:
Disadvantage, academic achievement, adverse childhood experiences, resilience

1. Introduction

The 2016 Annual Status of Education Report (ASER) survey reported that although most children from rural areas and urban slums in India are enrolled in school, only 46.7% of all assessed eighth-graders could read simple English sentences and only 43.3% could do the expected level of arithmetic (ASER, 2016). Literacy and math levels have been declining and dropout rates in secondary (high) schools, especially for girls, remains high. In India, the level and quality of education individuals receive can be based significantly on their income and socioeconomic status. There is great inequity in attainment and achievement levels for students from different socioeconomic levels, and dropout and academic failure rates for disadvantaged students is high (Tilak, 2002). The educational inequity in India includes (but is not limited to) differences between rural and urban areas, private and government schools, and gender differences.

As in several countries, poverty in India is inversely related to the level of education attained (Tilak, 2007). In disadvantaged communities, there are generally lower levels of achievement, high rates of dropout, and in extreme cases, total exclusion from education (Tilak, 2002). To lessen inequity, the government has attempted to implement policies like the Right to Education Act to give disadvantaged students free education and access to schools (Chatterjee et al., 2020). Large organizations are also obligated to contribute funds for Corporate Social Responsibility and some prominent organizations have identified education as an area to focus on. They contribute through giving financial aid and technology to schools, and other educational initiatives (Sharma & Kiran, 2012). Therefore, there is substantial funding channelled into trying to ensure that disadvantaged students can have more equal footing, and non-governmental organizations (NGOs) work alongside schools

[1] Corresponding author's address: Queen's University Belfast, Northern Ireland, UK
e-mail: achatterjee01@qub.ac.uk
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and the government to impact young people from disadvantaged areas (Batley & Rose, 2010). Despite considerable funding being directed towards educational initiatives in India, qualitative research in the area remains limited.

Despite the gaping inequality in educational opportunities and achievement in India, many students from low-income and disadvantaged areas achieve, graduate, and pursue higher education every year. While the income gap is constantly widening, many disadvantaged students succeed in national examinations and study at the same level as more privileged students in university. Using an interpretative phenomenological analysis (IPA) approach, this study sought to explore the multiple environmental levels at which young people from disadvantaged neighbourhoods are influenced in terms of their schooling, with the aim of illuminating the factors that may lead to achievement in spite of economic disadvantage. This may, in turn, inform interventions and social initiatives that work to promote achievement in similar communities.

Neighbourhood Disadvantage and its Relationship to Educational Outcomes

Children's development is shaped by both their biological and individual traits and the environment they are exposed to, according to Bronfenbrenner and Morris' Bio-Ecological Model of Development (2007). This environment includes family dynamics, peer groups, schools, and neighbourhood characteristics of where they live. Additionally, Pluess (2015) argues that there are multiple individual differences and determinants of environmental sensitivity. These theoretical perspectives therefore provide a useful framework for exploring and understanding the ways in which neighbourhood disadvantage influences child and adolescent development in relation to educational outcomes.

There are many studies in Western contexts that link disadvantage and educational achievement. Socioeconomic status, disadvantage and poverty are risk factors linked to educational outcomes, and early adversity can have long-term cognitive effects that extend into adolescence and middle age (Feinstein & Bynner, 2004; Richards & Wadsworth, 2004). Living in disadvantaged communities increases the risk of young people being exposed to factors outside the family that affect their development (Campbell et al., 2000). Deprived neighbourhoods are linked to higher crime rates for several reasons and at-risk students are more likely to struggle in school and drop out before graduating (McMillan & Reed, 1994; Peterson et al., 2000).

Studies suggest that children growing up in violent and disadvantaged neighbourhoods are likely to fall behind their peers from less disadvantaged neighbourhoods. While some of these effects seem small, they are significant and long lasting, and continue to affect learning skills and gaps in adolescence (Burdick-Will, 2016). A positive atmosphere in school is not always enough for academic success; even when schools attempt to create positive change, they can turn into places where "transmission of problem behaviors" from neighbourhoods occurs (Browning & Burrington, 2006). Similarly, neighbourhood instability can lead to lower adult efficacy in communities to regulate youths' antisocial or destructive behavior, gang activity, and truancy, which may lead to academic failure and early dropout, and neighbourhoods comprised of adults who are unemployed or have low-paying jobs provides children less exposure to financially secure adults, leading to a lack of understanding about the importance of achievement and higher likelihood of dropping out of school (Hicks et al., 2017).

The recency of exposure to neighbourhood deprivation matters too – children exposed to neighbourhood disadvantage more recently score significantly lower on tests than children who experienced disadvantage in the past (Hicks et al., 2017). Neighbourhood characteristics may also shape educational aspirations; adolescents in disadvantaged neighbourhoods have lowered college aspirations (Stewart et al., 2007). There is evidence from American neighbourhoods that being exposed to disadvantage for longer periods reduced the probability of high school graduation for black adolescents from 96% to 76%, and for non-black adolescents from 95% to 87% (Wodtke et al., 2011). This body of empirical evidence supports the claim that neighbourhood factors influence educational outcomes of young people.

Beating the Odds of Neighbourhood Disadvantage

While poverty and disadvantage impact outcomes, there is evidence globally that students who experience adversity and deprivation are often able to "beat the odds" and do well (OECD, 2019). Studies suggest that family support, personality traits such as high self-efficacy, and teacher support are mediating factors for high achievement in disadvantaged students (Cavazos et al., 2010; Floyd, 1996).

Resilience is a key concept in relation to achievement, along with family and school support. Garmezy's (1991) models of resilience explain how protective factors, which can be individual, familial, or other support structures in a child's life, compensate for adversity. Another definition explains resilience as the way in which individuals adapt and achieve positive outcomes despite risk factors and adversity (Masten, 2013). Both definitions highlight the importance of protective factors that help diminish the negative effects of adversity.

Individual characteristics such as self-awareness, internal locus of control, and goal-orientation can help young people from disadvantaged settings succeed in school and overcome disadvantages linked to adversities (Still, 2013). High school students in a low-income neighbourhood who reported higher levels of locus of control are also more likely to have higher educational aspirations (Flowers et al., 2003). At the family level, findings indicate that parental involvement in adolescents' academics is associated with fewer behavioral problems in school and higher academic aspirations (Hill et al., 2004). Research suggests that it is beneficial for parents to be involved and reach out to teachers actively to compensate for disadvantage (Yan, 2000). Parental involvement and monitoring are linked to achievement for adolescents, and protective factors in parenting include warmth, responsiveness, and consistent discipline (Masten & Reed, 2002; Spera, 2005). Having positive relationships with parents can promote children's wellbeing by influencing self-esteem and motivation levels (Cripps & Zyromski, 2009).

Beyond family, school can play an important role in protecting disadvantaged youth and promoting resilience. School can allow these students to be free of adversity for periods of time, and participating in extra-curricular activities can give them a sense of belonging (McMillan & Reed, 1994; Novotný, 2011). Teachers also play a vital role in student achievement. In qualitative research, students often credit positive and trusting relationships with teachers for their success. For instance, studies among successful elementary and high-school students found that most of them gave credit for their achievement to their teachers (Jeffrey et al., 2013; Land et al., 2014).

There is some evidence that having a source of support in the wider community may influence young peoples' academic achievement as well. While neighbourhood disadvantage is a risk factor, Witherspoon et al. (2016) found that having a strong connection in the neighbourhood can give young people affirmation and help them set goals and aspirations.

Rationale for Current Research

The aim of this study was to examine the experiences of high-achieving young people living in highly disadvantaged areas to help identify why they have obtained positive educational outcomes, beating the trend of the inverse relationship between disadvantage and achievement. Most existing research has been conducted with communities in the USA, UK, and Canada. In India there has been nation-wide research, but it has been focused on implications of large-scale policies in education and economics, or limited to a rural context, although many organizations working with youth operate in urban areas. Most previous research in India has also been of quantitative nature, looking at relationships between poverty and school enrolment or educational outcomes (Filmer & Pritchett, 2001; Tilak, 2018). Notwithstanding the amount of funding that goes into the social sector in India, there is a lack of understanding as to why some children from low-income communities overcome adversity and achieve highly compared to others with similar backgrounds of adversity. Using one-on-one interviews with young people and the principal of one case-study school in urban Bangalore, India, the goal of this study was to gather accounts of their lived experience of 'achieving against the odds'. In doing so, it would be possible to answer the research question: what forms of support and personal experiences may explain why these students were able to do well despite living in circumstances similar to those of their peers who do not achieve as highly? Such in-depth qualitative research may help inform practices adopted by NGOs and organizations that are involved in supporting the education and wellbeing of young people from similar contexts.

2. Methodology

Due to the lead researcher's cultural knowledge of the area, a school in a low-income urban setting in Bangalore with high levels of multiple disadvantage (including unemployment, high dropout rates in secondary school, and issues of community conflict) was chosen as an instrumental case-study school to obtain in-depth, phenomenological insights. The young people who attended this school all came from the

surrounding community and similar backgrounds in terms of income and socioeconomic disadvantage. Because of these characteristics, and the fact that the school produces alumni who "defy the odds" to become high achievers, it was a good fit for this study.

2.1. Research Group

Young people who attended the school at the time of data collection in February 2020, or those who recently graduated from it, were invited to be interviewed based on their high academic achievement. Purposive sampling was used within the case study school, and the principal, after being interviewed herself, acted as a gatekeeper to help identify students aged 16 and above whose arithmetic and literacy scores put them in the top 10% of their year group. The principal sent an invitation letter to them on the researcher's behalf, after which they were asked to communicate directly with the researcher about whether they wanted to participate. The interviews took place in an adjoining building to the school in order to maintain confidentiality. Twelve interviews were conducted, with six male and six female students, to maintain a gender balance.

Table 1. *Demographics of Participating Students*

Student Pseudonym	Gender	Age
Aditya	Male	20
Anushka	Female	18
Chithra	Female	17
Hiren	Male	19
Jaya	Female	19
Mira	Female	16
Nikitha	Female	17
Pavan	Male	19
Priya	Female	18
Sachin	Male	16
Shri	Male	18
Uday	Male	16

2.2. Data Collection Tools and Procedure

An initial interview was conducted with the principal about the general social context of the school and factors that she believed helped young people succeed. This helped gather information, in addition to students' perspectives, on the school context and policies that promoted young people's engagement, resilience and other factors that may have helped them achieve.

All interviews were conducted in English and questions to students were aimed at understanding individual factors (e.g., 'What motivates you to do well?'), social factors (e.g., 'Who are the people in your life who have an effect on how you do in school?'), and school-level factors (e.g., 'Can you tell me about your early experiences of school?') that may explain why these students succeeded despite neighbourhood disadvantage.

2.3. Data Analysis

The interviews, upon completion, were transcribed verbatim using audio recordings. After multiple readings of the transcripts, coding was done by making exploratory comments in a column and then drawing out themes from the notes made, as described by Pietkiewicz and Smith (2012). The lead author of this paper looked at the transcripts and reviewed the codes, under the supervision of the second author, for researcher triangulation and to enhance validity of the findings (Leung, 2015; Patton, 1999). A consistent approach was taken to coding and focusing on both the unique characteristics of participants as well as the patterns of meaning across participants. Each individual transcript was coded and emerging themes were noted one at a time before the superordinate themes were identified. Given the phenomenological focus of the research question, the data were analyzed using an interpretative phenomenological analysis (IPA) approach to meaningfully understand students' experience. Themes were studied, and findings were compared to those from Western contexts to check for similarities and differences across cultures.

2.4. Ethical Considerations

Consent to record the interviews and use the information was taken from participants both verbally and on consent sheets. Participants were guaranteed confidentiality, and all names were changed in the transcripts to

protect their anonymity. In the case that the interview triggered negative reactions, the student would be connected to a visiting counsellor with their consent.

3. Findings

Five main themes were identified in the interviews which were common across participants.

Sources of Community Support

Most participants reported having supportive relationships in the community. They were familiar with neighbours and other residents who they could rely on in different ways. For instance, these communities often see conflict between native residents and migrants who speak different languages. This is a point of tension, and Sachin, one of the participants, expressed how native residents "don't like" migrants like himself. However, he described being on good terms with a multilingual community member who helped mediate conflicts.

> *We will talk together…and eat together. And uh, if something problem is there, the aunty will come and ask, "What happened? What's happening? Tell me. I will take care about that" (Sachin)*

Sachin and his family shared a close relationship with her, which gave him a sense of security and shielded him from some of the conflict and negativity in the neighbourhood. Participants gave credit for their achievement to educated community members who helped with their academics. As one participant stated about a neighbourhood resident,

> *She is studying master's degree. She…then…I was not understanding math in 6th standard and my father told Akka (older sister) to help me. Then every day I was going at 6 o'clock and coming at 7 o'clock. Everything was clear, ma'am (Mira)*

The students interviewed in this study had access to a fair amount of support in situations where their parents could not help due to lack of information, literacy, or time. As another participant said about a neighbour,

> *He helps, ma'am. Say- when I was joining in first, he helped me to join this school, he filled all the forms and he tried to come here and he- he finished this work over here and he went (Uday)*

When Uday's parents were unable to enrol him in school due to limited knowledge, he could rely on a community member to do so. Another student, Pavan, mentioned a cousin who gave him advice to help him achieve his goal of becoming a social worker. Many participants were born and brought up in their neighbourhoods and thought of their community as "friendly". Even those who believed that their neighbourhoods were disadvantaged or unsafe agreed that even then, they had access to support that made their experience easier.

School Level Support and Structures

Parent-teacher interaction As acknowledged by the principal and students, the school helped foster relationships between parents and teachers. Apart from one participant, all others reported that their parents attended regular meetings with teachers to discuss their progress. The principal spoke about how parental investment and active involvement could be the distinguishing factors that encourage some children to succeed compared to others. She believed that parents who were more invested actively initiated conversation with teachers about their children. When asked her opinion on why some young people are high achievers, she mentioned parental investment.

> *Parents that take trouble…they come and ask whether children have studied and they see to their progress, and in the house they take a little extra trouble.*

According to her, students were usually high achievers because of parents who tried to visit school and engage in conversation about their child's progress.

Non-academic opportunities The case-study school was one that is well known in the area for promoting student participation in extra-curricular activities and providing platforms for them to demonstrate their talents. Many of the students agreed that they had been given opportunities beyond academics that helped them succeed and enjoy school.

> *If I was not playing football, I was not so good in school. Everyone knows that I play football, everyone comes to me and tells, "You play very good, I want to learn how you play, teach me" (Uday)*

Uday admitted that being involved in sports helped him stay motivated, get along with others, and do well. Some students agreed that extra-curricular activities helped them set goals. Mira claimed that a self-learning space set up by the school encouraged her to learn more about computers and set that as her goal for the year. Most participants were part of clubs or activities and believed this could have contributed to their success through helping them get along with peers and being more motivated to attend school.

Supportive teacher relationships In the student interviews and principal interview, it was evident that school staff were invested in students' wellbeing. Students appeared to appreciate guidance from teachers, felt at ease approaching most of their teachers and the principal, and each student claimed that this helped them succeed in school. The principal described how some staff stayed after hours to teach and spoke individually to students if they noticed behavioral changes. Because a lot of students were from families where they did not have supportive or stable adult relationships, the teachers and principal often addressed personal issues if they "sensed" that something was troubling a student.

Although every student spoke about receiving academic help from teachers, the close relationship they shared with teachers that went beyond academics was noticeable in the interviews. One student mentioned how her teachers spoke to her about her "behavior" and how she took their advice.

> *Sometimes I am doing wrong means teachers who- the teacher will call me independently and talk about, "Why are you doing like that? Your behavior is changing. You should not do that like that". They'll inform me. Then I can change myself (Anushka)*

Like Anushka, Priya emphasised how her teachers appreciated her work when she did well, cheered her up, and helped with "personal problems" too. When asked how her teachers helped her do well, Nikitha explained that when teachers realised that students were stressed, they spoke to them individually and offered solutions. One participant, Adithya, admitted he did not like school or have many friends. He seemed disinterested when asked about his family and peers, but when asked about his teachers, replied in a very different tone and with fondness he did not express earlier.

> *Teachers…teachers are really good, ma'am. And especially one teacher was very good with me. She was supporting, caring, always ma'am (Adithya)*

It was evident from the students' anecdotes and tones that they felt very close to specific teachers who they relied on for support.

> *I liked the teachers, ma'am. The way they teach…they treat like their own children, no, ma'am? So I liked that (Chithra)*

Chithra reminisced about how her teachers treated her like "their own children". She echoed the sentiments of the other students who credited their teachers for their school success.

Supportive family relationships

Parental support All participants attributed part of their success to close family relationships and a supportive home environment. Most expressed that their parents received very little to no education themselves but always attempted to help in other ways. While some participants spoke about a parent being unemployed or described their household as "poor", they credited their parents for checking if they had school supplies and funds required for school activities. Uday spoke about how it was difficult for his family to pay fees, but that his father always enquired if he needed anything for school.

> *If I need help, like I need money for the picnic trip, my father will help. And for football also, in the academy, if sometimes if I'll go out of my house, my father will tell "What do you need?...", I'll tell my father, he'll help me (Uday)*

Most participants appeared to be grateful to their parents for trying to make school a smooth experience despite financial stress. To all participants, it was clear that despite financial hardship, their education was a priority for their families. This was evident in several interviews, where students described how parents went

out of their way to ensure that they had whatever they needed to achieve in school. As one student summarised the ways in which her parents helped her succeed,

> *Even though they are not educated they will try to help me. And they'll find tuitions and if it is- then too, if it is difficult for me, they'll come and talk with teachers (Priya)*

Most participants also described how their relationships with their parents helped motivate them to do well and cope with the stress of studying.

> *Uh…they did not study, right? So they tell, "We did not study, education is the most powerful weapon which you have to get. Girls have to have education". So, they used to give some motivation…my father used to say like, "Whatever you want to study, study. Whatever you want to do, do. I will be with you, I will be there" (Jaya)*

Jaya valued this motivation she received from her family. While many young people like her do not have the luxury of choosing their line of study or work due to lack of options and funds, she thought her parents gave her freedom and unconditional support to pursue whatever she wanted. This seemed to be a driving factor in her goal setting and aspirations. Similarly, others spoke about their parents "encouraging" and "motivating" them to do well, which may explain why these students had higher self-esteem and were motivated to do well and succeed in school.

Home structures and "rules" Sachin also described how his mother made an exception for household chores when he had a test coming up. Most students in the school whose parents work long hours are compelled to do household work after school including cooking, cleaning, and watching younger siblings. This results in students falling behind academically, but Sachin mentioned how his mother gave him space to focus on studying. This is one way in which parents who may not be equipped to supervise academics tried to maintain structure, which may have helped their children succeed in school. Uday also described how his parents, who could not help academically because they were not literate, enforced a routine by pushing him to study and limiting his time playing or using his phone. Out of all the participants, only one student, Adithya, did not directly credit his family members for his academic success and maintained that his achievements were a result of his determination and teacher support.

Individual level factors

Resilience All the participants demonstrated resilience, some through their accounts of upheavals in their lives. Adithya, who was a high achiever in school, mentioned the deterioration of his college grades but emphasised that he had improved and was determined to achieve. Jaya spoke of her family's financial situation that took a turn for the worse during her childhood, resulting in a move from a costlier private school to the current school. She described her struggle adjusting to the new environment and the new language, but followed up with describing how her father encouraged her and how her three siblings also joined the same school.

> *They (sisters and brother) used to share anything, whatever we speak, like we don't need outside people to come and join us and play with us! We four are enough to play everything! We fight, we talk…(Jaya)*

It appeared that Jaya shared a very close relationship with her family, which may explain why she quickly adjusted to a strange environment during a time of financial duress for the family. Despite her struggle, her family provided encouragement and stability, which helped her learn quickly and become "equal" to the students in her new school. Other participants had similar turbulent experiences of parents becoming unemployed, or migrating from regions of the country affected by conflict, but described warm family relationships that may have protected them and helped them develop resilience. This echoes the idea that protective factors like family environment and parental support can promote resilience for disadvantaged children in such situations (Garmezy, 1991).

Goal-Orientation and Self-Esteem All participants were clear about their academic and career goals when asked. They had definitive steps that they needed to follow to attain higher education. While participants gave different reasons for wanting to succeed, they were all similarly goal oriented.

When asked if they felt like they "belonged" in the school and with their friends, almost all participants affirmed that they had close friends in school. However, some expressed their belief that they were "different"

from their peers. Although they were not able to elaborate to explain this belief, two of them stated that they knew they were different from others in some way. "I'm different. I have something. I know that" is what Adithya stated before explaining that his goals were different from those of his peers, while his curiosity and innovation set him apart and were more important than school grades. Mira also believed that she was "different" from other students and many participants expressed their desires and aspirations to do something "more" than the normal expectations from young people in their communities.

Many participants stated that support from their adult relationships encouraged them to dream big and not limit themselves to their circumstances, and this may have contributed to why they felt they were different and had "more" expectations than their peers. Jaya stated that while most young people like her only consider common professions such as software engineering, she was taught by her parents and teachers to "dream some big dreams" like going abroad, that most others from her background do not have. Because of the support participants received from their families, they seemed to have high self-esteem and believed they could accomplish more than the usual expectations. When asked about what motivated them to do well and achieve their goals, many of them expressed their desire for better lives for their families.

> *After education, I'll go to work. And they (parents)- they should sit at home ma'am, I should work and I should feed them (Chithra)*

Many participants in the study cited this as a main reason for wanting to achieve their goals and expressed that their family situations made them want to accomplish more than their parents had the opportunity to.

> *If I study and if I will go to a higher level I will get a new job and I can work in that…and I can earn money. And I can help them (parents) in any way…if they are not feeling well, I can help in that. If they are not able to eat food, I can help in that (Mira)*

Internal locus of control and self-efficacy All participants in the study believed that they were the ones in charge of their academic performance. While their goals differed, they all agreed that their hard work would determine their success. While the students were all from the same surrounding communities which were similar in terms of conflict, unemployment, and standards of living, only a very small number of them saw their community as "disadvantaged". While some participants acknowledged that they had family problems, very few of them related that to being part of a bigger problem or to the community being disadvantaged or deprived. This could perhaps have contributed to their self-esteem and self-efficacy, since they did not think of their circumstances as disadvantaged or unfortunate compared to those of others. Furthermore, some of them tended to think of their home and school lives as "separate", and while their experiences motivated them to build better lives, they maintained a boundary between the two. One student, when asked if issues at home or in the community affected his academic performance, stated the following.

> I *don't care about home ma'am. In school I will care about studying only (Sachin)*

While the students acknowledged that they had issues at home and in the community, they did not think that these problems would affect their academic performance if they worked hard. When asked what, if anything, could stop them from doing well, some of them said their education was their responsibility and that the only things that could hinder their progress were their own choices like time management between classes and activities, or getting "distracted" in school, both of which were in their control.

The significance of supportive relationships was evident in the interviews, whether at a community, school, or family level. At the school level, there were structures in place for parent-teacher interaction. Students credited a large part of their success to supportive relationships with their parents and teachers. Individual factors such as resilience and goal-orientation also contributed to academic success for all the participants. Most of these factors were interrelated and influenced each other – high resilience and self-esteem could be results of adult relationships and support systems in students' lives. Similarly, school structures and relationships could have been motivating factors for them to set goals and develop confidence.

4. Discussion

The findings that emerged indicated that community support contributes to positive outcomes for young people, either directly in terms of academic support or in other aspects that helped them cope. These findings align with research that suggests neighbourhood cohesion is critical in shaping young people's aspirations for

the future or providing role models who demonstrate the importance of achievement (Stewart et al., 2007). Adolescents may not set high aspirations because they rarely interact with financially secure and successful neighbours in disadvantaged communities, and so are less likely to understand the benefits of success and achievement (South & Baumer, 2000). However, in this case, there was evidence that participants had support from community members who were role models and stressed the importance of school, or helped whenever required.

The findings showed how school structures and relationships were instrumental in helping young people succeed and align with existing literature. According to Harding (2010), living in disadvantaged areas can cause mistrust in the educational system that may be perpetuated and reinforced by older locals or peers who dropped out of school. In this case-study school, it was clear that the school facilitated contact between parents and teachers, which may have helped reduce mistrust or unapproachability. In disadvantaged contexts, parents may feel excluded from and uninvolved in their children's lives at school, and unable to help with academic work (Grant, 2009; Hanafin & Lynch, 2002). This was most likely true for the case-study school, where most parents had little academic experience, so it was important that the school created encouraged parent-teacher dialogue and invested parents in their children's education, regardless of whether they could directly assist with academics or not. The school principal was aware that investing parents was a crucial requirement for students' academic success.

Research with at-risk youth in cities suggests that participation in extra-curricular activities is an enabler for academic success, and structured activities may protect adolescents and lead to positive psychosocial outcomes (Geary, 1988; Gilman et al., 2003). There are links between participation in extra-curricular activities and higher academic attainment, and achievement specifically for at-risk youth who had greater difficulty with interpersonal relationships (Mahoney et al., 2003). Being involved in extra-curricular activities is linked to goal self-regulation strategies and academic success, and being recognised for their talents may boost self-esteem and provide a sense of accomplishment for students (Lagacé-Séguin & Case, 2008; McMillan & Reed, 1994). The findings of this study are consistent with this wider literature; the school encouraged students to participate in activities, and students affirmed that this helped them set goals, get along with peers and feel a sense of belonging, all of which may have been factors for high achievement.

All participants in the study attributed part of their success to their teachers. Most participants had been at the school from a young age and spoke fondly about their early relationships with teachers. In early years of schooling, it is beneficial for children to develop positive relationships with teachers, which helps them adjust to school, form bonds, and build the skills to achieve academically (O'Connor & McCartney, 2007; Pianta & Stuhlman, 2004). A survey with at-risk Native-American students also showed how they described specific behaviors of their teachers that helped them succeed, such as listening to them, providing advice, encouraging them to set and reach goals, and holding them to high expectations (Coburn & Nelson, 1989). All these examples also emerged in the interviews for this study where the teacher-student relationships went beyond academics, giving students stability and motivation.

Most participants affirmed that their parents' encouragement and help were important for their academic success. They explained how their parents, despite limited education, were able to contribute in other ways and instil a sense of responsibility in their children. Research shows that home environment and parental attitude impact children's success more than parents' education and actual contribution to academics (Snodgrass, 1991). Parental support can also lead to higher self-esteem in children (Amato 1988; Cripps & Zyromski, 2009), which may explain why all the participants who described supportive parent relationships showed signs of high self-esteem. This holds true for families that have experienced economic hardship – parental behavior during periods of hardship has a greater effect on adolescent self-esteem than the actual impacts of economic difficulty (Whitbeck et al., 1991). This concurs with the findings of this study, since participants who experienced financial upheaval describe how their families helped them adjust and believe in their ability to achieve. Werner (2000) further points out that it is not only supportive parent relationships that can protect young people, but also other family relationships with siblings and grandparents. While participants mostly spoke about their parents, some mentioned the bonds they shared with their siblings or cousins who were a source of support as well.

In longitudinal studies with children experiencing stressful high-risk factors such as divorce and poverty, self-efficacy and a sense of competence were linked to resilience (Werner, 2000). Children who have problems at home are more likely to engage in activities in school that give them a sense of aptitude and competence, and this is reflected in the findings where most participants were involved in activities that helped them feel competent and set goals. This could have led to higher self-efficacy and resilience. As previously discussed, a healthy and nurturing relationship with one or both parents can also improve self-esteem, and most participants reported having supportive parents. These, along with other nurturing relationships may have helped them build self-esteem.

Common traits among young achievers that differentiate them from their peers are their internal locus of control and achievement-orientation (Werner, 2000). Resilient students have more long-term goals (Novotny, 2011). Each participant in this study described their goals for higher education or their desired professions. They also believed they were responsible for their academic performance and did not blame or cite their circumstances as a reason to underperform. Some clearly separated their home life and school life, saying that the former did not bear relation to their academic performance, maintaining that they were in charge. This could be a sign of high self-efficacy, similar to what some of the literature also describes – resilient students usually do not believe their family or neighbourhood issues are important to their academic achievement (McMillan & Reed, 1994).

5. Conclusion and Future Considerations

The young people in this study described factors from almost all aspects of their lives that were responsible in some part for their academic success. Child development is a combination and "coincidence" of multiple influences in an individual's life (Novotný, 2011). This was evident in the findings, since there were factors at every level of the participants' lives that contributed to their resilience and achievement. What stands out is the amount of credit participants gave to supportive adults in their lives. These relationships seem to have helped them achieve directly through academic and financial help, and indirectly by influencing their self-esteem and self-efficacy.

While most existing research is based in Western contexts, there are studies that have been conducted with diverse populations and minority groups which suggest resilience is context-specific and dependent on culture (Ungar & Liebenberg, 2011). The findings from this study seem to be consistent with wider literature and can begin to fill the gap that exists in Indian research for young people living in areas of disadvantage. While it demonstrated that a combination of individual, family, school, and wider community factors and relationships influence young people's achievement, further research is required in an Indian context. There are multiple layers of disadvantage that are yet to be addressed in addition to socioeconomic status and neighbourhood disadvantage. Some of these, such as caste-privilege and disadvantage, gender differences, and geographical disadvantage can influence (and sometimes determine) educational attainment and achievement levels. It is important to explore more of these levels of disadvantage and inequity, to be able to apply findings to more communities and design suitable interventions for young people. Given the many recent and ongoing attempts to fight educational inequity through funding and social initiatives, more qualitative and focused research in this area may guide interventions and policy in a developing country like India.

The findings of this study have implications for stakeholders in young people's education at different levels. For policy makers, the findings show a need for additional funding and emphasis for programmes and support mechanisms to enable the most disadvantaged communities, families, and students mediate the challenges presented by poverty. For school administrators and staff, the findings show how critical it may be to appoint teachers and principals who demonstrate a knowledge of the area and context within which the school operates. There is also a need to create and sustain meaningful engagement opportunities for schools, communities, and families. Establishing processes and mechanisms that allow these tripartite connections to be made should be a priority for schools. Teachers should be able to relate to and understand the lives of young people, in addition to understanding their context of disadvantage, and aim to embrace stimulating approaches to learning in order to engage all young people. Families, too, should be provided with support – not only in helping their child in school, but in their own learning and development as well.

Together, the findings may help families and teachers understand some of the factors that contribute to a student's achievement, therefore enabling them to better support young people, with their wellbeing at the centre. These findings are applicable to not only Indian contexts, but have value for disadvantaged communities globally, especially those in low-income countries with similar populations.

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Children' Stress, Depression, Sleep, and Internet Use

Shin-Il HAN[1], Dong Hun LEE[2]

1 Sungkyunkwan University, Department of Education, Seoul, Korea *0000-0002-6280-3859*

2 Sungkyunkwan University, Department of Education, Seoul, Korea *0000-0001-9226-7631*

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ABSTRACT

This study examines the connections between children's sleep, stress, depression, and internet use. Parents believe that sleep effectively reduces children's stress, while children instead insist that internet use is effective for reducing their stress. Based on that argument, this study has three purposes: to examine whether sleep or internet use is more effective at reducing children's stress, examine whether stress is related to depression, and examine whether sleep affects depression through children's stress as a mediating factor. To this end, this study gathered a sample of 1,796 children from 32 elementary schools—all fourth- to sixth-graders who volunteered to take the survey—and measured their stress level, depression level, sleep hours, and hours of internet use. The Daily Stress Scale of Korean Children, Korean Child Depression Scale, hours of sleep on average per day (sleep), and hours of using electronic devices per day (internet use) were used as the measurements. Regarding the statistical analysis methods used in this study, linear regression was used to examine the regression effect of both sleep and internet use on stress and the regression effect of stress on depression. Path analysis, one of the structural equation models, was also used to find direct, indirect, and mediating effects between variables. The study results show that (i) sleep, not internet usage, effectively relieves children's stress; (ii) stress is an important influence on depression; and (iii) sufficient sleep reduces stress, which reduces depression. It is recommended that future studies consider the quality of sleep and quantity of sleep for more valid data analysis and carry out follow-up research with wider age groups.

Keywords:
Sleep, Internet use, stress, depression

1. Introduction

Children have increasingly begun reporting that their daily lives are full of stress. In an international comparison survey of adolescents' health status in Korea, the US, Japan, and China, Choi and Lee (2010) found that 87% of Korean adolescents reported having felt stressed in the past year; their sources of stress ranged from personal matters to their social relationships. Collins-Donnelly (2013) found that the common sources of stress in children and young people were academic worries, family relationships, problems at home, friendships, romantic relationships, bullying, and change. Breas (2020) derived five categories of stress among young people: environment, symptoms, school/occupation, relationship, and personality. In turn, children's stress often causes fearfulness, physical symptoms, illness, depression, withdrawal, underachievement, anger, and retaliation (Lee, 2015).

Naturally, people undergoing stress will attempt to reduce that stress. Children also learn to reduce stress early because they are distressed by many events that adults can generally manage without stress (MedicilePlus, n.d.). Parents aim to help their children relieve stress by encouraging physical activity, having dinner together, or seeking counselling advice. However, as children grow and become better able to behave independently, they often choose different paths from what their parents expect them to choose. One of the children's favourite ways to relieve stress today is to play with electronic devices such as computers or cellular

[1] Corresponding author: Sungkyunkwan University, Department of Education, Seoul, Korea.
e-mail: sihan@skku.edu
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phones equipped with internet access. For example, in their study examining the impact of smartphone usage, Kwon and Lee (2012) reported that more than 50% of children had cellular phones and that children who did not have cellular phones tended to be bullied.

Electronic devices offer various services, such as games, social networking, email, internet surfing, and watching entertainment such as TV and movies. When asked, children often claim that the internet relaxes them and reduces their stress, and a study by Julian (2008) showed that this was the case in adults. In that study, 143 adults were connected to brain monitors and asked to play internet games or search for online articles for 15 minutes. Compared to the participants who searched for online articles, those who played Bejeweled 2 showed 54% lower stress, those who played Peggle showed 66% lower stress, and those who played Bookworm Adventures showed a 43% reduction in depression symptoms (Julian, 2008).

In contrast with children's opinions, parents believe that sleep or exercise are the best ways to reduce their children's stress. Their contention is supported by the Council on Communications and Media (2016), which recommends that children aged two to six have no more than one hour of screen-time per day while recommending that older children have consistent limits on their screen time so that their sleep and physical activity are not disrupted. For these reasons, parents whose children try to relax with electronic devices may instead attempt to persuade their children to get sleep or exercise.

Many researchers have established a positive relationship between sleep and stress reduction. For example, Sarraf and Dubey (2016) studied sleep and stress in students aged 20 to 25 years and found higher stress scores among students who slept for shorter periods than those who slept for longer. Powell (2009) also studied sleep and stress and found that people who reported more fatigue and less sleep are more likely to show more stress; the author suggested a causal relationship between poor sleep and stress.

Stress can also lead to physical and psychological distress. For instance, Bolger, DeLongis, Kessler, and Shilling (1989) reported that stress is closely connected to depression and has a highly influential relationship. Beck, Rush, Shaw, and Emery (1979) defined depression as an emotional disorder resulting from negative self-perceptions or poor adaptation to stress. Stress is one of the most influential predictors of depression in teenagers (Lim and Chung, 2009). The Ministry of Education (2018) reported increases of 35% to 40% in teenagers' stress awareness from 2015 to 2018 and that depression followed a similar trend. These findings indicate the need to investigate the relationship between stress and depression.

Considering the literature findings described above, there is a need to compare sleep and internet use to examine which one is more effective for reducing stress among children. Research in health and medicine regularly recommends that stress experienced by children in various human relationships and environments can be resolved by receiving sufficient sleep (Johnson, 2018), while children themselves prefer to play games or watch videos on electronic devices to reduce stress. In addition, as many studies have revealed that stress is associated with depression (Beck et al., 1979; Lim & Chung, 2009; Shiling, 1989), this study must analyse the association between children's stress and depression. Once the association is meaningfully established, it can then be determined whether sleep or internet use affects depression through stress as a mediating factor.

This study expects that sleep will have a positive effect on stress and depression reduction. Therefore, in the direction of the study's goal, the hypotheses of this study are as follows:

- Sleep is more effective at reducing children's stress than internet use through electric devices such as computers or cellular phones.
- Children's stress is related to depression.
- Sleep affects depression through children's stress as a mediating factor.

This study's findings can lead to a clearer understanding of the relationships among sleep, internet use, stress, and depression, which could help improve children's mental health outcomes.

2. Methodology

2.1. Research Model

The study examined the relationships between sleep, internet use, stress, and depression to infer possible causalities between those variables. The estimation of the relationships was mostly done through linear

regression. A structural equation modelling analysis was added last to investigate the mediating effect of stress on the relationship between sleep and depression.

2.2. Sample and Procedure

The sample for this study consisted of 1,796 children from 32 elementary schools in Pusan and Ulsan, two metropolitan areas located in southern South Korea. Before the survey, administrators at elementary schools in both cities were asked whether they were interested in participating in this study. The teachers and students who were interested agreed to participate. The students' homeroom teachers were provided with guidebooks explaining the study purpose and how to complete the survey form. For the survey, research staff members visited the committed schools and conducted the survey with fourth- to sixth-grade students; 52% (n = 939) were boys, and 48% (n = 857) were girls. The survey took 20 minutes to complete.

2.3. Measures

Stress: To measure stress in the students, the children were administered the Daily Stress Scale of Korean Children developed by Han and Yu (1995). Han and Yu (1995) performed factor analysis to verify the validity of the scale composition, and they primarily selected 77 items spread across six factors. After conducting a regression analysis for each sub-factor to increase the efficiency of item composition, the items with an increase in the explanatory power of less than 3% were excluded, and 42 items were ultimately selected. The scale consists of 42 items spread throughout six stress areas: parents (psychological burden or conflict stemming from parental actions or demands), home environment (dissatisfaction or psychological distress caused by the family environment), friends (problems in relationships with friends), learning (concerns or burdens related to academic performance and achievement), teachers and school (dissatisfaction with teacher's attitude and school life), and appearance (manner or style in social environment or circumstances a child is in contact with). The correlation coefficient between this Daily Stress Scale and the Quality of Life Scale developed by Olson and Barnes (1982) to estimate the criterion-related validity indicated that the validity of this scale was supported (r = -0.52, $p < 0.001$). Respondents rated each item on Likert scales ranging from 0 (*not at all agree*) to 3 (*strongly agree*) points, and higher scores indicate higher stress. The overall reliability coefficient of the scale was .92.

Depression: The students in this study were also administered the Korean Child Depression Scale to measure their levels of depression. The original version of the scale was developed by Kovacs (1981) and revised by Jo and Lee (1990) for Korean circumstances. Students consider how they have felt over the last two weeks to answer 27 items spread across five depression areas: depressive emotion (depressed mood or loneliness), behavioural disorder (aggressive behaviour or interpersonal disorder), loss of interest (loss of interest or pleasure in everyday life), self-deprecation (sense of worthlessness or negative self-image), and physiological symptoms (insomnia, loss of appetite, fatigue, or other symptoms). To estimate the criterion-related validity, the correlation coefficient between the Korean Child Depression Scale and the Korean form of the state-trait anxiety inventory for children of Cho and Choi (1989) was examined (Shin and et al., 2001). The statistical results showed that the validity of this scale was supported ($r = 0.88$, $p < 0.05$). The items were rated on 3-point Likert scales ranging from 0 to 2, and the overall reliability coefficient of the scale was .88.

Sleep: Hours of sleep on average per day.

Internet Use: Hours of use of electronic devices per day such as computers, cellular phones, or television for games, chatting through SNS, emailing, watching TV programs or movies, or surfing the internet.

2.4. Data Analysis

The data analysis of this study began with describing the variables and finding the correlations among them. Next, linear regression was used to examine the regression effect of both sleep and internet use on sleep (Analysis 1) and the regression effect of stress on depression (Analysis 2). Lastly, path analysis, one of the structural equation models, was used to determine the direct, indirect, and mediating effects between variables (Analysis 3). SPSS 26 was used for major statistical analysis, and SPSS PROCESS v.3.3 by Andrew F. Hays was used for the structural equation modelling analysis. Figure 1 below illustrates the whole data analysis process.

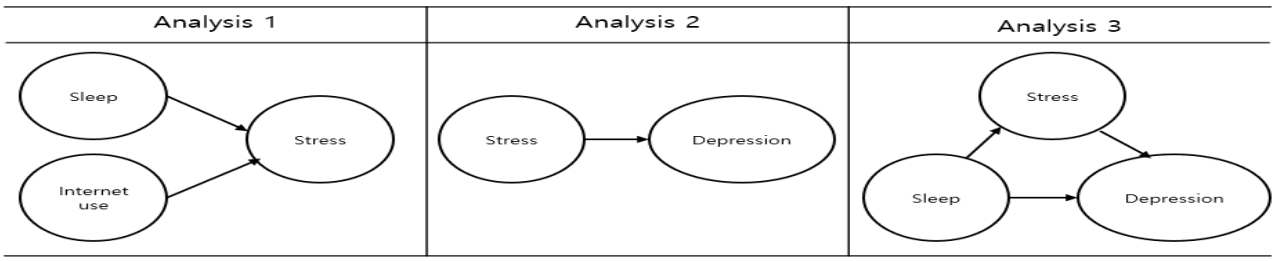

Figure 1. *Analysis Process*

3. Findings

3.1. Descriptive Statistics

Table 1 below presents the descriptive statistics for the children's sleep, internet use, stress, and depression. The students in this study averaged 7.87 hours of sleep per night and 4.10 hours of internet use per day. Table 1 also presents the zero-order correlation between variables, which were significant aside from those for internet use and depression. Sleep and stress were negatively correlated (r = -0.12, p < .01), while internet use and stress were positively correlated (r = 0.16, p < .01).

Table 1. *Means, Standard Deviations, and Zero-Order Correlations*

	M	SD	1.	2.	3.	4.
1. Sleep	7.87	1.61	_			
2. Internet Use	4.10	2.34	-.05*	_		
3. Stress	.75	.48	-.12**	.16**	_	
4. Depression	.92	.11	-.08*	-.01	.07**	_

*p<.05. **p<.01.

3.2. Analysis of Stress

Table 2 below lists the results of the simple linear regressions of sleep and internet use on stress. First, there was a significantly negative association between sleep and stress (β = -.12, p < 0.001): The more students slept, the less stress they felt. There was also a statistically significant positive association between internet use and stress (β = .16, p < 0.001); The children's stress levels increased as their internet use increased.

Table 2. *Simple Linear Regression Results of Sleep and Internet Use on Stress*

Dependent Variable	Independent Variable	Unstandardised Beta Coefficients	Standard Error	Standardised Beta Coefficients	t	p
Stress	(constant)	1.04	.06		18.66	<.001
	Sleep	-.04	.01	-.12	-5.21	<.001
	F=27.18 (p<.001), R^2=.02					
	(constant)	.62	.02		27.68	<.001
	Internet Use	.03	.01	.16	6.92	<.001
	F=47.94 (p<.001), R^2=.03					

3.3. Analysis of Relationship between Stress and Depression

First, simple linear regression was used to analyse the causal relationship between stress and depression. Table 3 below presents the results of regression analysis, where it can be seen that there was a significant positive association between stress and depression (β = 0.07, p < 0.01). Specifically, young people's depression increased as their reported stress increased.

Table 3. *Simple Linear Regression Results of Stress on Depression*

Dependent Variable	Independent Variable	Unstandardised Beta Coefficients	Standard Error	Standardised Beta Coefficients	t	p
Depression	(constant)	.91	.01		191.38	<.001
	Stress	.02	.01	.07	2.78	<.01
F= 7.73(p<.01), R^2=.00						

The mediation effect of stress was examined to verify stress as a mediator between sleep and depression. The effect of internet use was excluded in this mediation effect analysis because, as presented in Table 1 above, the

zero-order correlation of internet use with depression was not significant. As listed in Table 4 below, all passes showed statistical significance between variables. Sleep negatively affected both stress (B = -0.0364, t = -5.2565, $p < 0.001$) and depression (B = -0.0049, t = -3.1380, $p < 0.01$). As hypothesised, stress did have a positive effect on depression (B = 0.0127, t = 2.3796, $p < 0.05$). The results indicate that less sleep increases children's stress, which in turn increases their depression.

Table 4. *Results of Pass Analysis between Sleep, Stress, and Depression*

	pass		B	se	t	*p*	LLCI	ULCI
Sleep	→	Stress	-.0364	.0069	-5.2565	.0000	-.0500	-.0228
Sleep	→	Depression	-.0049	.0016	-3.1380	.0017	-.0080	-.0019
Stress	→	Depression	.0127	.0053	2.3796	.0174	.0022	.0231

As presented in Table 5 below, the total effect of sleep on depression was significant (B = -0.0054, t = -3.4531, $p < 0.001$), and the direct effect of mediation was supported (B = -0.0049, t = -3.1380, $p < 0.01$). Bootstrapping was used to examine the mediation effect of stress in the causal relationship between sleep and depression. An iterative sampling of 5,000 samples indicated that the pass from sleep to depression by mediating stress did not include 0 at 95% confidence intervals (CIs); that is, the mediation effect was meaningful (B = -0.0005, 95% CI = -0.0010, -0.0001).

Table 5. *Total, Direct, and Indirect Effects*

	Effect	se	t	*p*	LLCI	ULCI
Total Effect	-.0054	.0016	-3.4531	.0006	-.0085	-.0023
Direct Effect	-.0049	.0016	-3.1380	.0017	-.0080	-.0019
Indirect Effect	-.0005	.0002			-.0010	-.0001

4. Discussion and Conclusion

The purpose of this study was to compare and analyse two opposite arguments regarding stress reduction in children: the children's argument that internet use reduces their stress and the parents' argument that sleep is the best stress reducer for adolescent students. The study results revealed that sleep was more effective in relieving young students' stress than the internet. The children's stress increased with increasing use of electronic devices that allowed them to access the internet, and sleep was effective in reducing their stress, which was consistent with the findings outlined by Minkel and Banks (2012); those authors studied the effect of one night of sleep deprivation on subjective stress, in a setting in which sleep was managed in a controlled laboratory environment, and stressor intensity was manipulated by the difficulty of cognitive tasks, time pressure, and performance feedback. The sleep-deprived participants showed greater subjective stress than the controlled resting participants (Minkel and Banks, 2012). Despite such findings, children still insist that using electronic devices relax them (Kim and Davis, 2009), and many eventually display problematic internet use. Shotton (1991) described problematic internet use as a behavioural problem of concern related to human interactions with information and communication technologies, particularly among adolescents. George and Lenihan (2014) stated that such usage led to internet addiction, a recognised disorder.

To analyse the effect of stress on depression, an important factor in adolescents' mental health, regression analysis for depression showed that stress was an important influence on depression; the higher children's stress, the more depression they report. Depression is a dangerous symptom in adolescent mental health. Kim (2020) revealed that depression could cause social atrophy in adolescents, difficulties in interpersonal relationships, maladjustment in peer relationships, and delinquency. Given such findings, it is necessary to reduce the stress that causes depression in adolescent students. The American Psychological Association (2019) proposed the following activities for stress reduction: sleeping, exercise, talking with trusted adults, making time for fun and quiet, and getting outside to enjoy nature. Among these suggestions, the results of this study verified the importance of sleep.

Pass analysis verified that stress mediated the link between sleep and depression; sufficient sleep reduces stress, reducing depression. Becker, Adams, Orr, and Quilter (2008) found similar results indicating that poor sleep quality was associated with higher levels of stress and depression, both of which have reciprocal negative impacts on sleep. The unique contribution of this study is the testing of a relatively untried causal relationship between sleep, stress, and depression; researchers have previously focused on the idea that stress lowers the

quality of sleep. For example, Hanson and Chen (2008) reported that stress was harmful to sleep, and in a laboratory study, Kim and Dimsdale (2007) determined that exposure to laboratory stressors causes sleep disturbance.

By contrast, the findings in this study showed that sleep lowers stress, which in turn contributes to lowering depression. Children who got sufficient sleep showed less stress, which reduced their probability of depression; better sleep leads to better mental health. Consistent with these results, Mousseau, Lund, Liang, Spencer, and Walsh (2016) reported that insufficient sleep was associated with potentially severe mental health problems, including anxiety, stress, emotional concerns, and suicidal ideation. Mousseau et al. (2016) also found that adequate sleep was associated with numerous benefits, including improved psychological health and academic performance.

To conclude, this study has demonstrated that stress and depression are major factors in improving children's mental health and that both are well controlled with adequate sleep. The benefits identified in this study are not necessarily limited to the children who were the research subjects; instead, this information should be useful regardless of a person's age. Sufficient sleep reduces stress, decreasing depression, and it is recommended for all ages to maintain sound mental health. One last piece of practical advice for parents, teachers, and educational professionals to keep in mind from the results of this education-related study is that, in this study, the variable of internet use is conceptualised against that of sleep, which implies a desirable factor of stress and depression reduction for children. Although it was set up as a concept that does not help relieve stress and depression, internet use can also have many positive effects in real life. It is regarded as a major axis of educational, cultural, social, and emotional support for children. Therefore, it is not appropriate to solely focus on the findings showing that sleep is the top priority for relieving children's stress and depression while neglecting the positive value that internet use can give to children.

5. Recommendations for Future Research

The results of this study suggest ideas for future research. First, this study focused on the quantity of sleep, which means time spent lying in bed. Calculating sleeping hours in this way may not be an accurate method of computing children's sleeping time. For this reason, the concept of sleeping quality needs to be added to the calculation of sleeping time. Sleep quality refers to shorter sleep latencies, fewer awakenings, and reduced wake after sleep onset (Ohayon, 2017). It is necessary to investigate sleep quality to secure a more valid effect of sleep on stress and depression reduction. Second, it may not be appropriate to generalise the study results to adolescents, college students, and even adults, because it was only conducted on 4th- to 6th- grade children. Therefore, a meaningful follow-up study would expand the age range to adolescents, college students, and adults to examine whether similar results appear in the other age groups.

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The Effect of Psychodrama on Fibromyalgia Syndrome: A Case Report

Özlem ŞENER[1]

[1]*Istanbul Aydin University, İstanbul, Turkey* *0000-0002-0081-7374*

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ABSTRACT

Fibromyalgia Syndrome (FMS) is a chronic pain syndrome that often coexists with common musculoskeletal pain, sleep disorders, bowel syndrome, mood disorders, and fatigue. Although the aetiology of FMS pain has not been elucidated yet, psychotherapy methods are used in addition to physical methods to treat these pains. This study aims to examine the effect of psychodrama on a 62-year-old patient with back and chest pain and who lived alone. This patient participated in psychodrama group psychotherapy with 8 members who were all female and diagnosed with FMS. An informed consent form was obtained from the case for the study. This research is important because there are very few studies on fibromyalgia complaints with psychodrama group therapy, and it contributes to the literature. Studying the case with past trauma and losses in the psychodrama scene has led to a significant reduction in fibromyalgia complaints. As a result, the patient's pain level decreased from 90% to 32.5%, and the anxiety level decreased from advanced to normal. Thus, psychodrama group psychotherapy was found to be effective in reducing FMS pain.

Keywords:
Fibromyalgia syndrome, psychodrama, pain, case report, psychotherapy

1. Introduction

Fibromyalgia syndrome (FMS), widespread musculoskeletal pain, is a chronic pain syndrome characterised by the presence of sensitive spots in certain parts of the body, in addition to sleep disorders and fatigue (Bergman, 2005; Bernard, 2020; Yunus et al., 1981). It is known that psychiatric disorders are among the primary factors that trigger the disease symptoms in FMS patients (Hudsan et al., 1985). Therefore, in individuals with fibromyalgia, it is common to find irritable bowel syndrome (60%), chronic headache, migraine (70%), depression, anxiety, restless leg syndrome, fatigue (96%), temporomandibular dysfunction (60%), chronic fatigue syndrome (96%), and some symptoms or syndromes such as irritable bladder syndrome (12-35%) (Goldenberg et al., 2004; Wolfe et al., 1995; Yunus, 2007). Studies show that although it is known that FMS is seen more frequently in various psychiatric cases such as posttraumatic stress disorder, anxiety, eating disorders, substance use disorder, and bipolar disorder, it is most often accompanied by depression (Bernard, 2000; Verbunt, 2008). Since fibromyalgia patients cannot find a cure for their complaints most of the time, their lives pass by going from doctor to doctor. Moreover, it comes to a deadlock, either directly, such as prescriptions and nutritional supplements, or indirectly, such as job deficiencies and job loss (Altınkılıç et al., 2020; Spaecth, 2009; Wassem and Hendrix, 2003;).

When the prevalence of FMS is examined, it is reported as 0.5-5.8%, and this rate increases as education and socioeconomic levels decrease (Lera et al., 2009). In addition, the incidence of FMS increases with age and is most common between the ages of 40 and 60. It is known that the incidence of FMS is 4-9 times higher in women than in men (Solitar, 2010). Fibromyalgia patients constitute 5-6% of patients who come to general outpatient clinics of hospitals and 10-20% of patients who have recently applied to rheumatology outpatient clinics.

[1] Corresponding author's address: Istanbul Aydin University Florya Yerleskesi Besyol-Sefakoy – Istanbul/Turkey
e-mail: ozlemsener@aydin.edu.tr
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These studies show that fibromyalgia pain may be a subtype of somatoform disorders in terms of personal adjustment (Häuser et al., 2012; Yavuz, 2012). According to Koptagel (1996), patients diagnosed with psychosomatic diseases express their emotions, internal conflicts, and psychological needs with physical symptoms. They use their body as a means of communication, expressing their mental conflicts and anxieties using "organ language."

Since these patients cannot find a way to express their emotions in words, they cannot recognise their mental distress on a conscious level. For this reason, they do not think of receiving psychotherapy support, believing that their illness is physical by keeping the organ symptom in the foreground and holding it tightly (Koptagel, 1996). In addition, adult and pediatric FMS patients have stressful psychosocial life experiences (Anderberg, Marteinsdottir, Theorell, & Von Knorring, 2000) and low self-esteem (Anderberg, Forsgren et al., 1999). Individual or group psychotherapies are important among the treatment methods for FMS patients who cannot express their feelings verbally and use organ language. Studies have used Cognitive Behavioural Therapy (CBT) and Eye Movement Desensitisation and Reprocessing (EMDR) techniques in the treatment of these patients (Binkiewicz-Glińska et al., 2015; Kavakçı et al., 2010; Mazzola et al., 2009; Shapiro, 2001). Recently, findings are showing that psychodrama group therapy is also effective in reducing FMS pain (Altınkılıç et al., 2020; Bal & Şener, 2015).

Psychodrama group therapy is a psychotherapy method based on role theory and encourages functional behaviour change through dramatisation, role-playing, and dramatic self-representation (Kellerman, 2013). Moreno (1993), the inventor of psychodrama, describes psychodrama with the following words: *"A meeting of two: eye to eye, face to face. And when you are near I will tear your eyes out and place them instead of mine, and you will tear my eyes out and will place them instead of yours, then I will look at me with mine."*

For Blatner (2002), psychodrama is inner healing. This integrative method enables the individual to prove and express themself through actions and achieve integrity by integrating actions, emotions, and dreams in group relations. In psychodrama group studies, the aim is to analyse emotional transferences, develop healthy relationship forms such as tele (mutual empathy) and empathy (seeing things through another's eyes), provide purification (catharsis), and develop interpersonal learning and alternative thoughts with problem-solving and coping skills (Karadağ et al., 2012; Varma et al., 2018). The other main purpose of psychodrama is to allow the expression of emotions under the control (acting out) and verbal expression to be replaced by action. Psychodrama group therapy, structured on spontaneity, creativity, and action dynamics, enables group members to develop these skills by experiencing them with matching, role changing, and mirroring techniques. These features of psychodrama can help individuals diagnosed with FMS and those with high levels of anxiety and depression. The main subject of this research is to explore the effect of psychodrama on one of the individuals with FMS who has difficulties expressing themselves.

Considering psychodrama in psychosomatic and FMS treatments, a very limited number of studies are published. In a psychodrama study conducted with psoriasis patients, it was observed that there was an improvement in the stress coping skills of the patients and had a tendency to decrease depressive symptoms in individuals (Karadağ et al., 2010). In a psychodrama study conducted on individuals with psychosomatic disorders, it was found that group members had a decrease in pain levels and felt more relaxed (Bal & Şener, 2015). In another study, it was observed that in psychodrama practice with women diagnosed with fibromyalgia, there was an increase in individuals' beliefs and self-confidence in recovery and in expressing suppressed emotions (Altınkılıç et al., 2020). When these studies are examined, it is seen that psychodrama is functional on psychosomatic diseases, but the healing effect of psychodrama on a case has not been examined closely. This study is important in examining the effects of psychodrama more closely on a patient with fibromyalgia pain and as a source for new studies since a similar study has not been conducted before in literature. Moreover, it is predicted that by creating an alternative in FMS treatment, psychodrama could lead to programs developed later.

As a result, this study examines the effect of psychodrama group practices on FMS by addressing a case diagnosed with FMS and living with FMS pain for more than 10 years. For this purpose, the aim was to reduce FM complaints of the member who attended psychodrama sessions for 12 weeks with other group members attending for similar reasons. In addition, an enlightened consent form was presented to each member and case participating in the psychodrama sessions, and their consents were obtained.

2. Methodology

2.1. Research Model

This research model is a case report, which is one of the qualitative research models. This case was selected from the psychodrama group formed to examine the effect of psychodrama in FMS.

The case is a 62-year-old woman with two children, a girl and a boy. When she was 23 years old, she married the man she was in love with and left America to live in the eastern cities of Turkey. She lost her husband 18 years ago to lung cancer. A few years after her husband's death, her sister was fatally shot, and her mother died six months after her sister's death.

The table below shows all group members of descriptive measurements:

Tablo 1. *SF-36 Pain Analog and DAS-21 Anxiety Levels Pre-test Post-test Scores of Psychodrama Group Members*

	N	***Pre-test***	***Post-test***
SF-36 Health Screening (Pain Size)	Member1	80%	37.5%
	Member2	70%	40%
	Member3	55%	25%
	Member4	80%	37.5%
	Member5	75%	65%
	Member6	88.5%	67.5%
	Member7	70%	35%
	THE CASE	90%	32.5%
DAS21 (Anxiety level)	Member1	Advanced	Medium
	Member2	Advanced	Medium
	Member3	Advanced	Medium
	Member4	Medium	Normal
	Member5	Normal	Normal
	Member6	Too Advanced	Advanced
	Member7	Normal	Mild
	THE CASE	Advanced	Normal

Table 1 above shows the pain and anxiety pre-test and post-test values perceived by 8 members who attended the psychodrama sessions. When the pre-test and post-test scores of the SF-36 Health Screening pain sub-dimension and the DASS-21 scale anxiety sub-dimension were compared to all group members, it was observed that the case's pain and anxiety levels and her health status improved. Accordingly, as a result of the general pain analogue assessment of the case, the pain level decreased from 90% to 32.5% and the anxiety level from advanced to normal. When the values of the participant members were examined in Table 1, it was seen that the case showed more positive progress than all the other members in the group. It was observed that what was shared by the case in the closing session of the psychodrama study was also in line with the test results.

2.2. Case of Complaints

After these deaths, she stated that she had severe back pain and burning that put pressure on her heart from her back to the bottom of her chest. Her doctor diagnosed her with fibromyalgia. She was directed to the psychodrama therapy group by a physical therapy doctor. She had been on Prozac, Lypre, and Lyrica (150mg) for a long time but thought they were no longer working. She also had sleep disorders. In addition, according to the pre-test results applied to all group members, it was determined that the pain level felt by the patient was 90% according to the SF-36 Health Screening pain dimension, and the anxiety level was high according to the DASS-21 Scale.

The DASS-21 Scale applied to the case was developed by Lovibond and Lovibond in 1995, with a short form consisting of 21 items. There are 7 questions measuring depression, anxiety, and stress in the form that Yılmaz, Boz, and Arslan (2017) adapted into Turkish. According to this scale, only the anxiety level of the case was observed to be at an advanced level. SF-36 Health Screening was applied to the case and other members and

was adapted into Turkish by Demirsoy (1995), consisting of 8 sub-dimensions (Ware & Sherbourne, 1992). The dimension of pain, one of the sub-dimensions of the scale, was at a very high rate (90%) for the case.

2.3. Ethical

Ethical approval was obtained for this research with the decision of the Social Sciences Ethics Committee of the university where the researcher works, dated 31 July 2019, and the number 2020/7.

3. Findings

3.1. Psychodrama Practices

Between 14 December 2019 and 7 March 2020, psychodrama group sessions lasting 12 weeks were held in a private psychological counselling centre with the voluntary participation of 10 out of 16 patients diagnosed with fibromyalgia, directed by a psychodramatist. Two physicians working in a public hospital in Istanbul referred 16 patients diagnosed with FMS to the psychodramatist and conducted preliminary interviews with 16 patients. Ten of them volunteered to join the psychodrama group. Two group members could not continue the sessions because they exceeded the two-week absence period decided as a group at the beginning of the sessions. As a result, the sessions were completed with 8 members. The case stated that she was willing to participate in this study due to her trust in her doctor; this desire continued throughout the sessions.

The research is a case study who attended psychodrama sessions with individuals suffering from FM pain. The FM pain of this case was studied in psychodrama sessions.

3.2. Psychodrama Group Sessions

Together with the group members, it was decided to hold the psychodrama sessions once a week in the morning. Each session lasted two hours and was conducted in a total of 12 sessions. The sessions were held by a psychodramatist academic. Right after each session, the group manager recorded the process and their observations and reported all the information regarding the case. Pre-tests were collected from the group members before the sessions. The first three sessions were semi-structured, while the others were held by protagonist studies in line with the needs of the group members.

3.2.1. Session 1

In the first group session, the group leader introduced herself to the group members, gave information about the sessions and talked about the purpose of this study. It was reminded that the research would turn into a scientific study, but all personal information would be kept confidential. After all members (who voluntarily participated in psychodrama sessions) introduced themselves, group cohesion was achieved by playing psychodrama warm-up games. The case shared that with the guidance of the physical therapist, she chose to come to the sessions with a strong desire and expectation, even though she lived far away. She stated that she had been suffering from severe back and chest pains for years and although she had used Lypre and Lyrica for this, they were no longer relieving her pain. The case stated that the purpose of attending the sessions was to seek support other than medications, as she often suffered from back pain severe enough to warrant hospital emergency visits and wanted to get rid of it.

3.2.2. Session 2

In this session, brief information was given about the techniques used in psychodrama and their functioning. Later, with the "speaking organs" warm-up exercise, the group members were encouraged to switch roles with the organ or region representing fibromyalgia pains and try to create an awareness of the reasons for these pains. The case changed role with her back pain, and the leader talked to her pain. During the role reversal, it was understood that the pain emerged after the loss of her relatives. She could not express her feelings about grief until the psychodrama stage in her life. In this session, the case was instrumental in forming cohesion with her active participation in warm-up games.

3.2.3. Session 3

In this session, a protagonist study was conducted, and as the group members shared more deeply, the case shared more about her own life. Talking about her life experiences, she talked about her love for her husband. She said she did not want to take anyone else into her life and has lived alone since he died of cancer at the

age of 44. She shared that her sister was shot and killed some time after her husband's death and that her mother, who could not bear this pain, died six months later and stated these losses caused her deep sorrow. While explaining these, she did not cry and stated that she could not cry for a long time.

3.2.4. Session 4

During the general sharing of the group, the case stated that she could be a protagonist, but no one she wanted to work with was alive. The "here and now" principle of psychodrama was mentioned, and brief information was given about how everything can be embodied on the stage. The protagonist study was initiated by asking the case, who was already ready for the study, who she wanted to encounter. In the psychodrama scene, she met her mother, father, and husband, and it turned out that she had an intense feeling of resentment towards them.

The case first wanted to meet her mother, Mrs N, with whom she was very angry. In this encounter, it was seen that the case had cared for her mother throughout her illness. Close to her death, her mother left all her assets to the case's sister, which was the source of her anger toward her mother. For this reason, the case said that she could not forgive her mother. In this encounter with the mother, she told her mother that she felt inferior, and when she was replaced with the role of the mother, she said, she shared "*Your financial situation was very good, so I left it to your sister, and they forced me a little, too. I have always cared for you*." In the conversation with the mother, the encounter with her husband was raised because she expressed more intense anger at her husband for leaving all his properties to her brother.

When the role of the case was changed with her husband, she said, "*I thought my brother would think about you, but he disappointed me*". The case also stated that he witnessed his brother's unfaithful behaviour before his husband died. She finally had an encounter with her father. The group leader asked, "*What is your strongest feeling when you look at them?*" She shared that her strongest emotions were anger and resentment. It was observed that the inability to forgive them increases the feeling of resentment. It was noticed that her resentment, especially for her late husband, was very intense. For this reason, an atom of emotion was made to confront the feelings of unforgiveness and resentment towards her husband, and what these feelings did to the protagonist was examined. She was then asked to place these feelings on her husband (double), which she chose instead of herself. In this atom, she wanted to include the feelings of power and compassion, in contrast to unforgiveness and grudge. All the feelings that the case's inner voice was telling her were voiced, and she was asked to portray what these feelings did to her.

Upon the question "*What are these feelings doing to you*?" the case replied, "*Grudge and the inability to forgive put pressure on both my back and my left chest. Power is trying to get rid of grudge, there is mercy, but it stays far away, something between the present and nothing"*. The realisation that the area she described as feeling pain and the region where she felt these feelings were the same created a significant resolution and led to catharsis. The stage and the session were terminated by associating her grudge with her husband and creating a new scene where she forgave him and removed him from her life. This session was concluded with group members sharing roles and identifications with the case.

3.2.5. Session 5

When the case came to this session, she stated that she was surprised at what happened to her:

"*I had a very strange week. For years, without exception, I would turn off my lights, light my candles, imagine the beautiful memories we had with my husband, and relive those moments again and again. But oddly enough, I didn't feel like doing this for the first time this week. I asked myself many times and did not feel such a request inside me. Even though my pain still persists, it was very good for me.*" In a protagonist study conducted this week, the case was chosen as the protagonist's wife. She also stated that she was happy that other members saw her as a brave and strong woman during the sharing phase.

3.2.6. Session 6

In this session, the case shared that her pain started to decrease, and she did not understand how this was happening, but she felt very relieved. Although the group leader expected no change for the discontinuation of the drugs, the case added that in consultation with her physiotherapist, she decreased the drug intake in mg and wanted to discontinue them completely before the group was completed. In addition, she was more

dressed up and well-groomed for this session. She said that she did not think of taking anyone into her life for years, but she now wants a new relationship and feels open to this. In the last two sessions, she was openly sharing, and it was understood from the comments of other members that she had made an impression on them.

3.2.7. Session 7

The case could not attend this session.

3.2.8. Session 8

The case shared that although it was difficult to come to these sessions due to the long distance, she preferred to be here every week because it was good for her. In this session, she took part in the work of another protagonist member. In the sharing of association, she stated that the comments made by the other group members made her feel that she was not alone. She also stated that she had wanted to quit the medication for a long time and that it would be better for her to do so while the group was ongoing. It was stated that she should meet with her doctor.

3.2.9. Session 9

In this session, the case was happy to share that she and her doctor decided to stop using Lyrica. However, she shared that she felt the pain of the neural lump in her chest (diagnosed by a neurosurgeon many years ago) since she stopped taking this drug. Thereupon, it was recommended that she should consult a doctor again, and a study was carried out with her.

In this vignette (mini) study, the pain of the lump was embodied, and the pain was defined by enabling it to change its role. It was observed that the pain that started with a severe burning sensation in the upper left part of the back affected the entire left chest and its surroundings. The empty chair technique was used to learn the time and reason for this pain. It was learned that the pain that came after her husband's death was exacerbated by the murder of her sister and the mother's death. It has been understood that the underlying emotion of this neural lump, which has existed for more than 10 years, is anxiety due to living alone after the loss of loved ones. It was understood that the most important thing that was noticed in the study of the case was that if the anxiety decreased, the pain would go away by itself (the case stated this while role-playing the part of her pain). Upon this, confronting her anxiety managed to keep her concretised anxiety away from herself and structured a scene with a sense of confidence with her grandchildren and daughter expressing confidence; the study was ended by waiting to feel her feeling deeply.

3.2.10. Session 10

In this session, the case shared her decision to reduce her antidepressant (Prozac) medication in consultation with her doctor. She mentioned that her pain has not completely gone/subsided. Still, it has decreased significantly and that she does not want to use medication anymore, adding that it was incredible for her that she was able to stop these drugs. She also stated that the burning sensation in her chest completely disappeared thanks to the group work. She stated that in the past she would have ended up in a hospital emergency. In this session, the case took part in another member's work.

3.2.11. Session 11

The case could not attend this session.

3.2.12. Session 12

In this session, which was the last psychodrama session, the group was ended by doing a hot chair study for feedback.

The case shared that she did not have much faith in such a practice when she started psychodrama but still came willingly. After her first protagonist work, she shared that she was surprised at the change in herself, that this change was strange and interestingly good for her. With the courage she got here, she said that she managed to quit Prozac, which she had been using for ten years, and Lyrica, which she had been using for four years. She shared that although she did not use the drugs now, the burning sensation in her back and chest completely disappeared, and she felt less back pain compared to the past. In the hot chair study, group

members gave positive feedback. They stated that they took the case as an example, found her strong, observed that she benefited a lot from these sessions, and gave importance to her ideas.

4. Conclusion and Discussion

In this study, the effect of psychodrama group psychotherapy on FMS pain was examined through a case in a study involving volunteer individuals diagnosed with FMS. A psychodrama group treatment consisting of 12 sessions was carried out with volunteers. At the end of the psychodrama sessions and with the approval of the physiotherapist, the observed case gradually abandoned the use of fibromyalgia and antidepressant drugs, which she used at the start of the psychodrama sessions. She shared that she felt a decrease in pain and could overcome her pain without going to emergency clinics. She also stated that she could sleep at night even if her sleep were interrupted.

Psychodrama provided the opportunity for FMS patients to investigate what their pain and painful organs were trying to tell them by playing the role of the organs (role changing) to discover the feelings and needs behind their bodily complaints. In addition, with the matching, role-changing, and mirroring techniques used in protagonist studies, it also provided the opportunity to enable the case to feel relief (catharsis) regarding difficult situations, realise the emotional reasons behind her pain, increase the expression of emotions, and open the door to the spiritual needs behind these emotions. The results are consistent with the results indicating that the psychodrama method facilitates the regulation and processing of emotions in psychosomatic diseases (Calikusu, Yucel, Polat, & Baykal, 2002; Waller & Schidt, 2004).

Psychodrama has a healing effect in terms of the techniques used and creating a microcosm of society. Group members both heal themselves and become healers for others in psychodrama. Working with members who have similar problems in group psychotherapy practices decreases the feeling of loneliness and improves understanding, sharing, empathy, and creating new solutions to difficulties (Yalom, 1998). Role-playing and role changing also provide an opportunity for the person to play "social roles" and gain experience (Kellerman & Hudgins, 2013). In this study, it was seen that the interaction between the case and the members had a significant curative effect on the case. The members shared that the case had an important effect on the formation of group cohesion. At the same time, although the case came from a long distance, she joined the group regularly every week. In the week after the protagonist study, the positive change in the case's clothing, her courage to quit her medication, and the roles that she took in other members' studies can be considered indicators of the healer and healing effect of the case. The case stated that during the psychodrama process, she experienced a transformation with the effect of both the protagonist study and the roles chosen by the other group members in their work, which contributed to reducing her pain.

At the end of the group study, a significant decrease was observed in the FMS pain level of the case compared to the beginning level. When the literature was examined, only one study on psychodrama with FMS patients was found. Psychodrama group work was conducted with women diagnosed with FMS, and it was concluded that members had a decrease in pain, an increase in their beliefs that they would recover, and improved life satisfaction (Altınkılıç et al., 2020). Bal and Şener (2015) conducted a psychodrama study with individuals with psychosomatic symptoms and concluded that their somatic symptoms had decreased.

In conclusion, the findings obtained from the case examined within the scope of the study suggest that psychodrama may significantly contribute to the reduction of and recovery from pain for those diagnosed with FMS. Matching made with protagonist studies, role changes, and resolution of organ language led to a decrease in the cases' FMS pain and a transformation of/in her mental life. The result obtained from this study, which was approved by the researchers' university Social Sciences Ethics Committee with the decision of the Ethics Committee on 31.08.2020 and the number 2020/7, is limited to this research, and more research is needed to cover the overall results.

5. Recommendations

- ✓ More experimental studies should be conducted in this area to apply research findings to the general public.
- ✓ Informative training and meetings should be held about the diseases of individuals with fibromyalgia pain that explain that there are treatment methods available other than medication use.

- ✓ Only a specific issue such as chest pain can be addressed in FMS patients; psychotherapy studies can be carried out, and the results can be examined.
- ✓ Collaboration between clinical physicians, psychologists, and psychological counsellors can be developed to reduce FMS patients' density in physician visits and physical therapy clinics.

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