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The Analysis of Risk Behaviour Tendencies of Teenagers According to the Use of Wattpad and Some Socio-Demographic Variables*

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Abstract

This research aims to explore the risk behaviour tendencies of teenagers in relation to the use of Wattpad and some socio-demographic variables. The research employs correlational research model and was conducted with 572 students (237 female students and 335 male students) studying at science, Anatolia and vocational high school. Risk Behaviours Scale and Demographic form were used to collect data. Descriptive statistics (arithmetic mean, standard deviation), t test for independent samples, one-way variance analysis (ANOVA) and Pearson correlation were used in the analyzes. Findings show that teenagers have the highest mean scores of nutrition habits and suicide tendency. It has been found that males generally have higher risk behaviors and the rate of risk behaviors increases as age progresses. Lastly, risk behaviors showed a significant difference according to the use of Wattpad application and psychological problems. Therefore, preventive measures and studies should be taken to create awareness about the conscious use technology.

Keywords: Wattpad, Risk Behaviours, Social Media, Teenager, Technological Addiction

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This study is an extended version of the research presented in and selected for Tübitak 50th Research Project Region Exhibition.

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INTRODUCTION

Addiction, which is considered as an important public health problem, has been mostly studied in relation chemical dependencies. Today, it is seen as a behavioural addiction that is common among teenagers, due to the multi-faceted changes and new inventions brought by technology. The low level of awareness of the conscious use of technological and communication tools confronts young people with individual and environmental risks. In addition, increasing accessibility with the widespread use of smart phones is a facilitator of everyday life, but its impact on social relations is an important issue. Many disciplines work on the impact of communication technologies on individuals' self and identity processes, daily life and social relations (Binark, 2016). Wattpad, a social networking platform is one of the applications that influence our daily life.

Each new technology brings a problem with it. According to Marshall McLuhan who claims that every new means of communication functions as an organ of the body and replaces a sense organ. The tools that become part of any sense organ naturally affect the individual's patterns of thinking, and changes interpersonal communication and thus social organization (Binark, 2016). However, each new mass media did not try to eradicate one another, but also supported each other, and changed their form. The emergence of many new industries has caused the culture to become a determinant factor of economy and led to popular culture and its uncontrolled progress (Doğan, 2016). Today, the individual and environmental impacts of new communication technologies are discussed within the context of new media concept, internet, social media environment and applications and digital games (Binark, 2016).

Allen Lau, one of Wattpad's earliest founders, has developed the application to meet his reading needs. He then produced the Wattpad in 2006 by combining his works with Ivan Yuen, who developed a book-reading project via technology (Öktem, 2015). Lau states that there are over 40 million users and that he wants to bring the number of users to 1 billion with the expansion of internet and smart phones. His future plan is to create a method that can allow stories to be connected with one another (Öktem, 2015). In particular, allowing smartphones to integrate social media accounts and profiles and enabling various applications to be downloaded from the store can meet users' desire to be in a permanent network and invite them to produce their own content. The Wattpad application, one of the applications that provide this content production, allows you to create a story or to interpret the story of someone else. Mobile technology provides permanent connection to the users and users generate voluntary data as a free labour force for the new media industry. This means that smartphones become increasingly indispensable tools for people. According to McLuhan, it becomes a tactile-audio-visual new body extension for individuals (Binark, 2016).

The literature shows that Wattpad has been considered as technological addiction (Ağır, 2016) and it has been defined as transmedia storytelling and presented in multiple platforms in literary terms (Güran Yiğitbaşı, 2018; Sarı, 2017). On the other hand, young Wattpad writers and readers in Turkey show an immense interest in Wattpad. This has been instrumental in the emergence of a new wave among the youth literature in Turkey (İskender, 2017). This application allows users to read and write new stories wherever they have internet access. The application can be used by anyone and anyone can produce stories using this application. Although it has no literary content, it meets the pleasures and desires of the individuals as an online platform. This unrestricted, non-editorial posture of social media is used by many people who want to be writers and want to reveal their self in a virtual sense rather than in a real sense (Doğan, 2016).

The use of social media and the means of technological communication facilitates the communication of individuals. It is emphasized that the fact that timid individuals who feel alone and who cannot communicate using face-to-face communication prefer such networks and this increases their psychological well-being (Magsamen-Conrad and Greene, 2014). However, the internet and mobile phones have become widespread even among very young people, which will lead to some problems such as technology addiction (Çelik and Şahin, 2013). Although individuals tend to use social media to escape from the stress and problems they face in everyday life, it is known that the

time spent in virtual environment is not a healthy coping strategy and creates other risks (Tekinarslan and Güner, 2010). This is because the individual adapts a procrastination behaviour by escaping from real problems. In a sense, it is seen that new media environments, which have become a part of young people's eco system, deeply affect our daily lives and eliminates online-offline world distinction. Especially younger generations use smartphones, digital games and social media applications as a normal part of their daily life routines (Binark, 2016).

With the increasing use of technology, excessive use of social media applications has caused significant changes in the behaviour of individuals. Although the use of the Internet has made it possible to exchange information globally, it has brought uncontrolled use and excessive use (Eryaman, 2010). The fact that people spend most of their free time on virtual world has an important role in the emergence of physical, psychological and social problems (Ilgaz, 2015). The Wattpad application is mostly used among the age range of 11 and 18 (Kuşcu Kıyak, 2015), and it directs individuals towards risk behaviours as a way of solving the problems they face (Alikaşifoğlu and Ercan, 2009). These risk factors cause teenagers to display violent and aggressive behaviours (Özcebe et al., 2005). The fact that fiction characters in Wattpad books display risk behaviours mean that there is a possible risk (Ağır, 2016) and highlights the importance of identifying risk behaviours among teenagers. It is important to investigate the risk behaviours Wattpad could promote and identify preventive measures.

Allen Lau's 2015 statistics with regard to use of Wattpad in Turkey reports that around two million people logged in this application in a month's time. These people spent around fourteen million minutes on the application and uploaded around seven million stories in Turkish. Other developing countries also showed similar interest in the application (Öktem, 2015). Turkey is the third country that most uses Wattpad after the US and Philippines (Kuşcu Kıyak, 2015; Öktem, 2015). However, there are so few studies conducted in Turkey on the use of Wattpad and majority of these limited research focus on content analysis. There is no research that investigates the relationship between Wattpad and risk behaviours of teenagers. Therefore, this research aims to explore the use of Wattpad in relation to risk behaviours, risk behaviour tendencies and socio-demographic variables.

METHOD

Research Design

This study aims to identify teenagers' risk behaviours and to explore whether these risk behaviours tend to differ according to socio-demographic variables such as gender, age, type of school, class level, and psychological problems. Therefore, it is a correlational research that aims to examine the existence and degree of interchange between two or more variables (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz and Demirel, 2017).

Participants

The participants of the study consisted of 572 students who were enrolled in a science, two Anatolian and two vocational high schools in the centre of Van during 2018-2019 academic year. 58.6% (n:335) of the participants were male whereas 41.4 % (n:237) of the participants were female. The required permissions were taken from Van Provincial Directorate of National Education. Table 1 shows the distribution of participants according to socio-demographic characteristics whereas Table 2 shows the use of Wattpad application.

Table 1. Distribution of participants according to socio-demographic characteristics

Demographic characteristics	Groups	n	%
Gender	Woman	237	41.4
	Man	335	58.6
Age	14	77	13.5
	15	159	27.8
	16	214	37.4
	17	122	21.3
School Type	Science School	168	29.4
	Anatolian High School	218	38.1
	Vocational School	186	32.5
Grade	9	170	29.7
	10	219	38.3
	11	183	32.0
Psychological problems in the past	Yes	222	38.8
	No	350	61.2
Psychological Help	Yes	68	11.9
	No	504	88.1

13.5% of the participants were 14 years old; 27.8% were 15; 37.4% were 16; and 21.3% were 17 years old. 29.4% were science high school; 38.1% were Anatolian high school; 32.5% were vocational high school students. 29.7% were 9th grade, 38.3% were 10th grade and 32% were 11th grade students. 38.8% of the participants stated that they experienced psychological problems in the past and 11.9% of them received psychological help (Table 1).

Table 2. Distribution of participants according to the use of Wattpad application

Use of Wattpad Application	Groups	n	%
Do you know what Wattpad application is?	Yes	223	39.0
	No	265	46.3
	Partially	84	14.7
Have you ever used it?	Yes	171	29.9
	No	401	70.1
How often do you use it? (N=171)	Sometimes	125	73.1
	Often	46	26.9
Would you recommend it to another person?	Yes	155	27.1
	No	417	72.9
Do you think it is a technological addiction?	Yes	75	13.1
	No	159	27.8
	Partially	338	59.1

As seen in Table 2, 39% of the participants know what Wattpad is, 14.7% partially know, 46.3% do not have an idea about Wattpad. 29.9% of the participants stated that they used Wattpad application, and 26.9 % of students out of 73.1% of the students who used the Wattpad application (n = 171) stated that they frequently used it. 27.1% of the participants would recommend Wattpad application. 13.1% of respondents consider Wattpad application as a technological addiction, 59.1% think it is partly addictive and 27.8% do not see it as a technological addiction.

Data Collection Tools

Demographic Information Form. This form has two sections. The first section includes questions about socio-demographic data such as gender, age, type of school, class, psychological problems and psychological support. The second part asks questions about Wattpad such as the use of Wattpad social media application, the frequency of use, technological addiction, etc.

Risk Behaviours Scale (RBS). This scale was developed by Gençtanırım and Ergene (2014) to evaluate the risk behaviours of teenagers using five-point Likert Scale. The scale has 36 items and 6 subscales. The subscales are antisocial behaviours, use of alcohol, use of tobacco, suicide tendency, nutrition habits, school dropout. There is only one item which is reverse coded (item 21). The higher

scores indicate risk behaviours. Cronbach alpha co-efficient score calculated for this research is .91. As for the subscales, scores are .80 (antisocial behaviours), .95 (use of alcohol), .90 (use of tobacco), .60 (suicide tendency), .72 (nutrition habits) and .80 (school dropout).

Data Analysis

SPSS 15.0 package program was used for statistical analysis. The socio-demographic data of the students are presented with frequency and percentage table whereas descriptive statistics was used to show the mean, standard deviation and skewness scores of the scale and its sub-scales. Skewness coefficient was used for the normality test. The skewness coefficient (\pm Skewness) within ± 1 limits shows that there is no significant deviation from the normal distribution. The points that do not show normal distribution are firstly tried to be adapted to normal distribution by inverse methods such as square root and logarithmic transformation. Non-parametric tests can be used for points that cannot be adapted to normal distribution (Büyüköztürk, 2011, p. 40). Since the total score of the scale and alcohol use, tobacco use, and school dropout subscale scores did not show a normal distribution, conversion methods were used. The normal distribution of alcohol use scores could not be obtained; therefore Mann Whitney U, Kruskal Wallis H and Spearman Brown correlation tests were used to compare the scores according to demographic variables.

Two independent t test was used whereas one-way analysis of variance (ANOVA) test was utilised to compare school type, age, class, and Wattpad application according to variables. In the ANOVA test, LSD post hoc test was used to determine the difference between the groups. Pearson correlation analysis was used to analyse the relationship between the subscales. The level of significance was expressed as $p < .05$.

FINDINGS

Descriptive Statistics of Risk Behaviours Scale Scores

Table 3. Descriptive statistics of risk behaviours scale

Scale and Subscales	Min.	Max.	\bar{X}	SS	Skewness
Antisocial Behaviours	1.00	5.00	2.11	.82	.95
Alcohol Use	1.00	5.00	1.22	.64	3.75 ¹
Tobacco Use	1.00	5.00	1.66	1.01	.60
Suicide Tendency	1.00	5.00	2.64	.92	.22
Nutrition Habits	1.00	5.00	2.91	.94	.03
School Dropout	1.00	5.00	1.58	.76	.98 ¹
Total Score	36.00	170.00	69.48	20.57	.62 ¹

1: After logarithmic transformation

Table 3 shows that the mean total scale score of the teenagers participating in the research is 69.48 ± 20.57 . Considering the lowest (36) and highest (180) scores that can be taken from the scale, students' risk behaviours are low. When the risk behaviours of the students were examined in terms of sub-scales, the highest mean scores were taken from nutrition habits (2.91 ± 0.94) and suicidal tendency (2.64 ± 0.92) sub-scales. It was determined that these risk behaviours were moderate and other risk behaviours were low.

Comparing The Risk Behaviour Trends of Teenagers According to the Use of Wattpad

Table 4. Risky behaviour trends of teenagers according to the use of Wattpad application

Subscales	Do you know what Wattpad application is?	n	\bar{X}	SS	F	p	Significant Difference
Antisocial Behaviours	1-Yes	223	2.18	.89	1.12	.326	
	2-No	265	2.07	.78			
	3-Partially	84	2.07	.76			
Use of Alcohol	1-Yes	223	1.29	.77	1.83 ¹	.400	
	2-No	265	1.19	.56			
	3-Partially	84	1.14	.45			
Use of Tobacco	1-Yes	223	1.72	1.12	1.81	.164	
	2-No	265	1.67	.95			
	3-Partially	84	1.49	.84			
Suicide tendency	1-Yes	223	2.70	.95	3.96	.020	A,C>B
	2-No	265	2.53	.92			
	3-Partially	84	2.81	.82			
Nutrition Habits	1-Yes	223	3.10	.94	9.56	.000	A,C>B
	2-No	265	2.73	.93			
	3-Partially	84	2.99	.89			
School Dropout	1-Yes	223	1.55	.77	1.65	.193	
	2-No	265	1.64	.80			
	3-Partially	84	1.48	.59			
Total Score of the Scale	1-Yes	223	71.70	22.66	1.93	.146	
	2-No	265	68.09	20.08			
	3-Partially	84	67.95	15.30			

1: Kruskal Wallis H test X2 score

Table 4 shows that there is a significant difference in suicide tendency ($F = 4.20$; $p < .05$) and nutritional habits ($F = 6.49$; $p < .05$) sub-scales. According to the results of LSD post hoc test conducted to determine the difference between the groups, suicide tendencies and nutrition habits scores of the students who know Wattpad application are significantly higher than the students who do not know Wattpad application. Antisocial behaviours, alcohol use, tobacco use, school drop and risk behaviours are not found to be significantly different ($p > .05$).

Table 5. Risk behaviour tendencies according to the use of Wattpad application

Subscales	Have you ever used it?	n	\bar{X}	SS	t	p
Antisocial behaviours	Yes	171	2.21	.86	1.94	.052
	No	401	2.07	.80		
Use of Alcohol	Yes	171	1.31	.79	-0.94 ¹	.347
	No	401	1.19	.56		
Use of tobacco	Yes	171	1.78	1.12	1.29	.197
	No	401	1.62	.95		
Suicide tendency	Yes	171	2.80	.90	2.88	.004
	No	401	2.56	.92		
Nutrition Habits	Yes	171	3.04	.97	2.16	.031
	No	401	2.86	.93		
School Drop out	Yes	171	1.53	.73	-1.18	.237
	No	401	1.60	.77		
Total Scores	yes	171	72.42	22.09	2.33	.020
	no	401	68.22	19.79		

1: Mann Whitney U test Z score

Table 5 shows that the suicide tendency ($t = 2.88$; $p < .05$) and dietary habits ($t = 2.16$; $p < .05$) subscale scores and risk behaviours scale total score ($t = 2.33$; $p < .05$) of students who use Wattpad are significantly higher than those who do not use. Antisocial behaviours, use of alcohol, use of tobacco and school dropout scores did not differ significantly according to the use of Wattpad application ($p > .05$).

Comparison of Scores of Risk Behaviours by Demographic Variables

Table 6. Risk behaviours tendency according to gender

Subscales	Gender	n	\bar{X}	SS	t	p
Anti-Social Behaviours	Female	237	1.90	.71	-5.43	.000
	Male	335	2.26	.86		
Use of Alcohol	Female	237	1.11	.38	-3.95 ¹	.000
	Male	335	1.30	.76		
Use of Tobacco	Female	237	1.40	.76	-6.14	.000
	Male	335	1.86	1.11		
Suicide Tendency	Female	237	2.73	.90	2.15	.032
	Male	335	2.57	.93		
Nutrition Habits	Female	237	3.05	.93	2.84	.005
	Male	335	2.82	.95		
School Dropout	Female	237	1.32	.50	-7.09	.000
	Male	335	1.76	.85		
Score	Female	237	64.80	15.37	4.47	.000
	Male	335	72.79	23.02		

¹: Mann Whitney U test Z score

Table shows that there is significant difference between gender and anti-social behaviours ($t=-5.43$; $p<.05$), use of alcohol ($Z=-3.95$; $p<.05$), use of tobacco ($t=-6.14$; $p<.05$), suicide tendency ($t=2.15$; $p<.05$), nutrition habits ($t=2.84$; $p<.05$) and school dropout ($t=-7.09$; $p<.05$) and total score of risk behaviour scale ($t=-4.47$; $p<.05$). Male students' antisocial behaviours, use of alcohol, use of tobacco, school dropout and general risk behaviour scores are significantly higher than the scores of female students. Female students' suicide tendency and nutrition habit scores are significantly higher than male students' scores.

Table 7 presents the ANOVA results to explore whether risk behaviour tendencies differed significantly according to the age.

Table 7. Risk behaviour tendencies according to the age

Scale and Subscales	Age	n	\bar{X}	SS	F	p	Significant Difference
Antisocial Behaviours	A-14	77	2.05	.74	2.29	.078	
	B-15	159	1.99	.72			
	C-16	214	2.19	.91			
	D-17	122	2.18	.82			
Use of Alcohol	A-14	77	1.10	.53	24.91 ¹	.000	C,D>A,B
	B-15	159	1.10	.32			
	C-16	214	1.30	.73			
	D-17	122	1.33	.79			
Use of Tobacco	A-14	77	1.28	.66	22.91	.000	C,D>A,B
	B-15	159	1.36	.67			
	C-16	214	1.83	1.11			
	D-17	122	2.02	1.18			
Suicide Tendency	A-14	77	2.52	.91	1.03	.377	
	B-15	159	2.61	.85			
	C-16	214	2.71	.94			
	D-17	122	2.60	.98			
Nutrition Habits	A-14	77	3.09	.91	1.86	.135	
	B-15	159	2.82	.85			
	C-16	214	2.87	.98			
	D-17	122	2.99	1.01			

School Dropout	A-14	77	1.40	.71	8.23	.000	C,D>A,B
	B-15	159	1.45	.67			
	C-16	214	1.62	.74			
	D-17	122	1.78	.88			
Risk Behaviours Total Score	A-14	77	65.09	18.58	7.61	.000	C,D>A,B
	B-15	159	64.40	14.55			
	C-16	214	71.97	22.00			
	D-17	122	74.48	23.87			

¹: Kruskal Wallis H test X^2 score

Table 7 indicates that use of alcohol ($X^2=24.91$; $p<.05$), tobacco use ($F=22.91$; $p<.05$), school dropout ($F=8.23$; $p<.05$) and the total score of the scale ($F=7.61$; $p<.05$) shows significant difference according to the age. LSD post hoc results show that alcohol and tobacco use, drop out and risk behaviour scores of 16 and 17 year old teenagers are significantly higher than those of 14 and 15 year old students. Antisocial behaviors, suicide tendency and nutrition habits were not significantly different in terms of age ($p>.05$).

The results of one-way analysis of variance (ANOVA) on whether teenagers exhibited a significant difference according to school type are presented in Table 8.

Table 8. Risk behaviour tendencies according to the type of school

Scale and Subscale	School Type	n	\bar{X}	SS	F	p	Significant difference
Antisocial behaviours	A-Science high School	168	2.29	.83	5.87	.003	A>B,C
	B-Anatolian high school	218	2.04	.83			
	C-Vocational High school	186	2.03	.77			
Use of Alcohol	A-Science high School	168	1.16	.59	26.47 ¹	.000	C>A
	B-Anatolian high school	218	1.20	.62			
	C-Vocational High school	186	1.31	.70			
Use of tobacco	A-Science high School	168	1.53	.89	10.78	.000	C>A,B
	B-Anatolian high school	218	1.60	1.02			
	C-Vocational High school	186	1.86	1.07			
Suicide tendency	A-Science high School	168	2.75	.94	4.69	.010	A,B>C
	B-Anatolian high school	218	2.69	.94			
	C-Vocational High school	186	2.47	.87			
Nutrition Habits	A-Science high School	168	3.03	.83	10.94	.000	A,B>C
	B-Anatolian high school	218	3.04	.94			
	C-Vocational High school	186	2.65	.99			
School Dropout	A-Science high School	168	1.60	.76	2.70	.068	
	B-Anatolian high school	218	1.49	.75			
	C-Vocational High school	186	1.66	.76			
Risk Behaviour Total Scores	A-Science high School	168	70.67	18.78	.95	.385	
	B-Anatolian high school	218	68.67	20.77			
	C-Vocational High school	186	69.34	21.91			

¹: Kruskal Wallis H test X^2 score

When the risk behaviors were examined according to the type of school, antisocial behaviors ($F = 5.87$; $p<.05$), alcohol use ($X^2 = 26.47$; $p<.05$), tobacco use ($F = 10.78$; $p<.05$), suicide tendency ($F = 4.69$; $p<.05$) and nutritional habits ($F = 10.94$; $p<.05$) were found to be significantly different. LSD post hoc test results showed that antisocial scores of science high schools were significantly higher than Anatolian and Vocational high school students. The alcohol use scores of vocational high school students are significantly higher than those of science high schools. The tobacco use of vocational high school students are significantly higher than Anatolian high school students. Another significant difference was obtained from suicide tendencies and nutrition habits sub-scales. According to this, the mean scores of science and Anatolian high school students are significantly higher than those of vocational high school students. There was no significant difference in the risk behaviors scale score and school dropout scores according to the school type ($p>.05$).

ANOVA test was used to determine whether the risk behaviors of adolescents show a difference according to grade variable. The results of this analysis are shown in Table 9.

Table 9. Risk behaviour tendencies according to the grade

Scale and Subscales	Grade	n	\bar{X}	SS	F	p	Significant Difference
Antisocial behaviours	A-9 th grade	170	2.01	.73	4.20	.015	C>A,B
	B-10 th grade	219	2.07	.83			
	C-11 th grade	183	2.25	.86			
Alcohol Use	A-9 th grade	170	1.17	.54	.73 ¹	.697	
	B-10 th grade	219	1.21	.60			
	C-11 th grade	183	1.29	.76			
Tobacco use	A-9 th grade	170	1.37	.74	15.53	.000	B,C>A
	B-10 th grade	219	1.73	1.04			
	C-11 th grade	183	1.86	1.13			
Suicide Tendency	A-9 th grade	170	2.44	.88	5.84	.003	B,C>A
	B-10 th grade	219	2.70	.87			
	C-11 th grade	183	2.74	1.00			
Nutrition Habits	A-9 th grade	170	2.86	.95	1.22	.295	
	B-10 th grade	219	2.88	.92			
	C-11 th grade	183	3.00	.97			
School Dropout	A-9 th grade	170	1.48	.77	6.49	.002	B,C>A
	B-10 th grade	219	1.55	.72			
	C-11 th grade	183	1.71	.79			
Risk Behaviour Total Score	A-9 th grade	170	64.89	18.67	9.68	.000	B,C>A
	B-10 th grade	219	69.40	19.95			
	C-11 th grade	183	73.83	22.11			

¹: Kruskal Wallis H test X^2 score

The antisocial behaviours ($F=4.20$; $p<.05$), tobacco use ($F=15.53$; $p<.05$), suicide tendency ($F=5.84$; $p<.05$) and school dropout ($F=6.49$; $p<.05$) and total score of risk behaviours scale ($F=9.68$; $p<.05$) show significant difference according to the grade of students. LSD post hoc results display that antisocial scores of 11th grade students are significantly higher than 9th and 10th grade students. The tobacco use, suicide tendency and risk behaviour scores of 10th and 11th grade students are significantly higher than 9th grade students. There was no significant difference in alcohol use and nutritional habits subscales ($p>.05$).

Table 10. Risk behaviour tendencies according to the experience of psychological problem

Scale and Subscale	Psychological Problem in the Past	N	\bar{X}	SS	t	p
Antisocial behaviours	Yes	222	2.25	.89	3.29	.001
	No	350	2.02	.76		
Alcohol use	Yes	222	1.33	.84	-1.43 ¹	.152
	No	350	1.16	.46		
Tobacco use	Yes	222	1.95	1.23	4.77	.000
	No	350	1.49	.79		
Suicide Tendency	Yes	222	2.92	.93	6.17	.000
	No	350	2.45	.87		
Nutrition Habits	Yes	222	3.10	.96	3.74	.000
	No	350	2.80	.92		
School Dropout	Yes	222	1.76	.88	4.80	.000
	No	350	1.46	.65		
Risk Behaviours Total Score	Yes	222	76.26	24.04	6.47	.000
	No	350	65.18	16.70		

¹: Mann Whitney U test Z score

The antisocial behaviours ($t=3.29$; $p<.05$), tobacco use ($t=4.77$; $p<.05$), suicide tendency ($t=6.17$; $p<.05$), nutrition habits ($t=3.74$; $p<.05$), school dropout scores ($t=4.80$; $p<.05$) and risk behaviours scores ($t=6.47$; $p<.05$) do not show significant difference according to the prior experience of psychological problem (Table 10). Thus, the antisocial behaviours, tobacco use, suicide tendencies,

nutrition habits, school dropout and risk behaviours scores of students who have experienced psychological problem in the past are significantly higher than those who have not experienced. No significant difference was found between the use of alcohol and experience of psychological problem ($p > .05$).

Results with regard to the relationship between the variables

The results of the correlation analysis revealing the relationships between the Risk Behaviors Scale sub-scales are presented in Table 11.

Table 11. The relationship between the risk behaviour tendencies

Subscales	2 ¹	3	4	5	6
1-Anti-social behaviours	.26**	.45**	.28**	.37**	.45**
2-Alcohol use ¹	1	.51**	.04	.15**	.36**
3-Tobacco Use		1	.18**	.22**	.53**
4-Suicide Tendency			1	.30***	.28**
5-Nutrition Habits				1	.21**
6-School Drop out					1

*: $p < .05$ **: $p < .01$ ¹: Spearman Correlation

As seen in Table 11, the correlation analysis conducted to determine the relationship between risk behaviors of teenagers showed that there were statistically significant relationships between the sub-scales of the scale. There is a positive and significant relationship between antisocial behaviours and alcohol use ($r = .26$; $p < .05$), tobacco use ($r = .45$; $p < .05$), suicide tendency ($r = .28$; $p < .05$), nutrition habits ($r = .37$; $p < .05$) and school dropout ($r = .45$; $p < .05$). There is also a positive relationship between alcohol use and tobacco use ($r = .51$; $p < .05$), nutrition habits ($r = .15$; $p < .05$) and school dropout ($r = .36$; $p < .05$). A positive relationship between tobacco use and suicide tendency ($r = .18$; $p < .05$), nutrition habits ($r = .22$; $p < .05$) and school dropout ($r = .53$; $p < .05$) was found. Lastly, there was a problem positive and significant relationship between suicide tendency and nutrition habits ($r = .30$; $p < .05$) and school dropout ($r = .28$; $p < .05$); and nutrition habit and school dropout ($r = .21$; $p < .05$).

DISCUSSION AND CONCLUSION

The informatics tools facilitate our lives, and especially the unconscious use of the internet threatens many aspects of social life, including leading to several problems for teenagers (Kaya, İkiz and Asıcı, 2016). The use of new media tools has brought about changes in our consumption practices, education, friendship and social relations and started to transform the reading and writing habits of the young people. Wattpad application is one of the media tools playing a role in our changing daily habits (Güran-Yiğitbaşı, 2018).

This research aims to identify risk behaviours of teenagers based on Wattpad usage status and argues that such behaviour can be mediated through appropriate and effective intervention studies. Findings revealed that 38.8% of teenagers had a psychological problem in the past, but only 11.9% received psychological support. Despite the high rate of experiencing psychological problems, the low incidence of getting help shows that teenagers can overcome their problems. However, it is concluded that teenagers should be supported in terms of psychological resilience and strengthening.

Teenagers face multi-faceted changes throughout their transition to adulthood such as finding their identities. Therefore, teenager years is a period in which an individual is exposed to risk behaviours and these behaviours may lead to negative consequences (Kaya, 2016). It is mostly the teenagers and youth whose use the social media (Ayaz and Kayhan, 2016). The problems related to risk behaviours and technology addiction necessitate to examine the specific problems teenagers encounter to take preventive measures.

The study showed that 53.7% of the teenagers know Wattpad and 29.9% of the students stated that they use the application and 26.9% of the students use it quite frequently. Wattpad has millions of users in Turkey; however, the percentage of the users of the application is quite low in this research. This may be because this study was conducted in an eastern province. According to statistics, most users are based in Istanbul, Turkey, Ankara, Izmir, Adana, Bursa, Antalya, Konya, Kayseri, Samsun (Kuşçu Kıyak, 2015; Öktem, 2015). Again, the majority of students do not recommend Wattpad, which suggests that they are aware of the risks of the application. The research of Güran Yiğitbaşı (2013) found that there was a positive correlation between the time they allocate for reading and recommending books to their friends. Students who use Wattpad for 5 hours or more per week recommends Wattpad more than other students. According to the study of Güran Yiğitbaşı (2018), a significant number of university students (75%), high school (57%) and secondary school students (41%) think that Wattpad books include violent elements. The reason why majority of students do not recommend Wattpad to other students may be explained with an awareness of the violence. Most students (72.2 %) regard Wattpad as a technology addiction, which means students are aware of the negative effects of the application.

When risk behaviours of teenagers are examined, one can see that the risk behaviours are low in general and only nutrition habits and suicide tendencies are moderate. Considering that the majority of the participants are students of Science and Anatolian high schools (67.5%), academic success is an important preventive factor. The school type has both protective and risk factors and may have an impact on mental health and problem behaviours; therefore, academic achievement, positive attitude towards school and high self-esteem can play a positive role for science high school students' mental well-being (Karaduman, 1997).

When the risk behaviours of teenagers are compared with the use of Wattpad, the suicide tendencies and nutrition habits of the students who know Wattpad application are significantly higher than the students who do not know the application. The total scores of suicide tendency, nutrition habits subscale scores and risk behaviours scores of the students using Wattpad application were significantly higher than the scores of the students who did not use Wattpad application. The use of Wattpad was associated with suicidal tendencies and nutrition habits, and overall risk behaviours. This result may be related to the fact that teenagers have long-term nutritional problems and the depressive effects of the contents encountered on the Internet make them vulnerable to risky situations. Within the context of technology addiction, the results of the research (Berber, Karadibak ve Günay Uçurum, 2014) revealed that the risk of obesity is very high among young people who play online games more than five hours a day. In general, it is emphasized that the time spent with technological tools is a significant threat against the health among young people. A research (Ayaz and Kayhan, 2016) that investigated the relationship between individuals' social media preferences and basic needs found a negative significant relationship between social media use and survival need. It has been observed that the level of meeting the survival needs decreased as individuals' social media usage rates increased. The research of Ağır (2016) on the effect Wattpad novels on identity development of teenagers between 11 and 18 years found out that the protagonist characters of the books exhibited risky behaviours. It was found that there was not much of the risky behaviours at the beginning of the relationship but being in risky environments increased such behaviours. Considering that Wattpad users are predominantly women (Güran Yiğitbaşı, 2018; Kuşçu Kıyak, 2015), the findings of female characters in the analysis of Wattpad books show that the negative self-perception in women leads to the tendency to behave in accordance with the demands and expectations of the male character to be able to be valued and loved. In male characters, the feeling of anger towards both family and environment is higher whereas depressive feelings are more intensely seen among female characters (Ağır, 2016). It can be said that teenagers' identification with these characters can negatively affect them.

When teenagers' risk behaviours were examined in terms of gender variable, males had higher scores on antisocial behaviours, alcohol and tobacco use, school drop-out and overall risk behaviours while females had higher scores in the subscales of suicide tendency and nutrition habits. In general, risky behaviours are higher in males. For instance, the research of Üner et al. (2007) found that male

students are more likely to use alcohol and other substances. In another study conducted with high school students (Körük and Aypay, 2017), use of alcohol and Tabaco scores were higher among males and suicide tendency was higher among females, which echoes the results of this research. In the study conducted by Arıkan, Yavuz, Yiğit and Ece (2017), it was found that men's scores were significantly higher in the sub-scales of antisocial behaviour, alcohol and tobacco use, unhealthy eating habits and school drop-out, whereas women were likely to show suicidal tendency. The reason why alcohol and cigarette use rate are higher in male adolescents is that such behaviours are often supported by male peer groups, or can be a norm to be accepted to a male-dominated gang, and gender roles and supporting social structure may also reinforce such behaviours (Körük and Aypay, 2017). Girls are restricted socially whereas men are allowed to be free. These different patterns of socialisation can make men more susceptible to substance abuse (Brook et al., 2003). Likewise, the social structure in Turkey approves men's the use of alcohol and smoking, and women's use of alcohol and smoking behaviours are not so much tolerated (Altındağ, Yanık, Yengil and Karazeybek, 2005). Numerous studies (Chen, Yeh, Huang and Lin, 2014; Springer, Selwyn and Kelder, 2006; Telef, 2014) found that suicide tendency was higher in women than men. Research (Körük and Aypay, 2017) have indicated that high suicidal tendencies in women may be explained by the fact that women are more affected by psychosocial factors, and that they face more hormonal and biological factors affecting their moods, and experience more with familial and social pressures. The research of Vançelik, Önal, Güraksın and Beyhun (2007) also supports the findings of this research and indicates that girls have higher scores of nutrition habits.

When the risk behaviours of teenagers were examined according to age variables, it was found that the alcohol and tobacco use of 16 and 17 year old students were significantly higher than those of 14 and 15 age group. Telef (2014) found that teenagers' antisocial behaviours, suicide tendency and nutrition habits did not show a significant difference according to the age variable, yet age shows a significant difference in tobacco and alcohol use and school drop scores. It can be said that tendency to smoke, drink, and drop out increases as the student gets older. In schools, age is considered to be an important factor related to consumption of substances such as cigarettes, alcohol and drugs (Farmer and Hanratty, 2012) and elder students tend to show more risky behaviours (Zimmermann, 2010). The research in the literature (Güler, Güler, Ulusoy and Bekar, 2009; Özyurt and Dinç, 2006; Sarı, 2006) also support these findings and argue that students in higher grades are more likely to show risky behaviours. Accordingly, 11th grade students' antisocial behaviour scores, 10th and 11th grade students' smoking behaviours, suicide tendency, school drop-out, and risky behaviour total scores are higher than the 9th grade students. The 9th grade students has the lowest mean. In the study conducted to investigate the tendency of drop out (Şimşek, 2011), it was found that drop out was higher in 11th grade.

When the risk behaviours of teenagers were examined in terms of school type, the antisocial behaviour tendencies of the students of science high schools were higher. As expected, students in science high schools can be explained in connection with the low rate of participation in social activities and activities because they work more in terms of lessons and projects. It was found that the averages of vocational high school students were higher in alcohol and tobacco use subscales. It can be said that science and Anatolian high school students are success-oriented, which protects them from risky situations. The fact that academic achievement is related to healthy behaviours (He, Kramer, Houser, Chomitz and Hacker, 2004) and positive attitudes towards school serve as a protective factor against psychological problems (Jessor et al., 2003; Siyez, 2007). The research of Siyez and Aysan (2007) also found similar results. Accordingly, the problem behaviours decrease as the academic achievement level increases. The suicide tendency and nutrition habits of the students of Science and Anatolian high schools were higher than the average of students studying at vocational high schools. Although the students in vocational schools have less academic success rate and less problematic behaviours, science high schools students can also experience and display problematic behaviours. Considering that science high schools are boarding schools, students are most likely to show psychological symptoms as well as developmental difficulties because of being away from their families (Kaya, İkiz and Asıcı, 2016) and their eating habits may also be affected by these factors.

When the risk behaviours of teenagers are examined according to their psychological problems, teenagers who have experienced psychological problems in the past have significantly higher total score of antisocial behaviour, tobacco use, suicide tendency, nutrition habits, school dropout and risk behaviours than those who have not had psychological problems in the past. Psychological problems indicate the presence of risk factors. Siyez and Aysan (2007) found that risk factors were positively related to problem behaviours and protective factors were negatively related to problematic behaviours. Similarly, Telef (2014) found negative correlation between positive experiences of risky behaviour, but indicated positive correlations with negative experiences and risky behaviours.

Many disciplines ask the question of “What are the factors that push people to use Wattpad?” Wattpad author Ashleigh Gardner responds to this question by comparing it with another social media application. According Gardner, people upload photos on Instagram to share their moments but not to be a professional photographer, and likewise, people use Wattpad to share their own stories and express themselves (International Publishers Association, 2015). The application serves well to the needs of teenagers who want to be recognised and develop belonging to a group (Pişkin and Eldelekoğlu, 2013). The antisocial behaviours, tobacco use, suicide tendency, nutrition habits and risk behaviours score of teenagers who received psychological help in the past are significantly higher than those who have not received psychological support and help. The teenagers with psychological problems are less likely to take healthy decision and therefore they are more lastly to display risk behaviours (Körük and Aypay, 2017). In a study by Arıkan et al. (2017), it was found that students with a history of depression had significantly higher scores in all subscales of the risk behaviour scale.

When the correlation results were examined, it was seen that there were positive relationships between risk behaviours. This means risk behaviours increase other risk behaviours and teenagers with a risk behaviour is also prone to other risk behaviours. (National Library of Medicine cited in. Aras, Günay, Özcan and Orçın, 2007).

The results of this research show that the risk behaviours were more intense among teenagers who stated that they had psychological problems and received psychological help. This result is supported by a large number of studies that argue psychological problems make individuals prone to risks. Another important finding is that risk behaviours are more common among teenagers who know and use Wattpad application. Considering both social media and technological addiction, it is possible that teenagers may be adversely affected by the contents of these practices due to the fact that they are at the stage where they are most vulnerable to environmental risks due to the characteristics of their developmental period. It is considered that it is important to conduct preventive studies on conscious use of technology systematically. There is also a need for further research to explore the effects of Wattpad. The participants of our research were 9th, 10th and 11th grade science, Anatolian and vocational high school students in Eastern Turkey. Therefore, the findings of the research cannot be generalised for different age groups and Turkey.

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Examining the Relationship Between Parental Attitudes and the Study Habits of Gifted Children

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Abstract

Gifted children are the group which has a high level of mental potential, and managing the school with this potential generally without studying, therefore having no effective studying habits. Another important factor in developing study habits is parental attitudes. The aim of this study is to examine the relationship between the parental attitudes and the study habits of gifted children. In this scope, parents' attitudes were classified into democratic, authoritarian, permissive and overprotective which were put forward by Baumrind (1966; 1971) in his studies, and the study habits were handled as two dimensions as study quality and study responsibility. In the study, the relational screening model one of the quantitative research methods was used. The research was carried out 2016-2017 and its participants consist of 100 gifted children aged between 7-12 and their 100 parents. As the data collection tools, Parental Attitude Scale contains 62 items developed by Demir and Şendil (2008) and 23-items Study Habits Scale developed by Çalikoğlu (2009) were used. The findings were obtained through independent t-test, mean, Pearson Product Moment Correlation coefficient and regression analysis. As a result of the study, no difference was found between the study quality which comprises technical issues such as taking notes, repeating, study responsibility and total study habits regarding age and gender. It was found that families generally held democratic and overprotective attitudes, there was a relationship between democratic attitude and study quality and democratic attitude increased the quality of child's study. For this reason, it is essential to train families on study habits and the impact of the family on this issue.

Keywords: Giftedness, parents, study habits, attitude.

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INTRODUCTION

The psychological atmosphere within family plays a decisive role in the healthy development of the child both psychologically and physically. Parent's attitudes are one of the main elements affecting this atmosphere. Parent's attitudes affect children's values, beliefs, habits and behaviors. For instance authoritarian and overprotective attitudes have negative influences on study responsibility and effective study habits of children. These attitudes can both kill children's self-motivation and inhibit their success (Buri, Louiselle, Misukanis ve Mueller, 1988; Spera, 2005; Steinberg, Dornbusch, Brown, 1992). This situation is especially important for gifted children who demonstrate underachievement with the rate is of 50%. Afat (2013) found that parents of gifted children held mostly democratic and overprotective parental attitudes in their study. Among these attitudes, she pointed out that overprotective parental attitude was the most predictor of intelligence. Similar findings were also obtained by Ogurlu, Yalin and Birben (2015) in a study of the relationship between perfectionism scores of gifted children and parental attitudes, the children's families of gifted children in Turkey received the highest scores from the democratic and overprotective parental attitude. Research showed that there was a higher level of harmony in the families of gifted children, they emphasized mutually supportive relationships, and they were in open communication (Abelman, 1991; Cornell and Grossberg, 1987; Karnes and Shwedel, 1987). In Turkey, families may exhibit different attitudes depending on the risk level. But the common point in both attitudes is that it is essential to present a route to child for doing something; to offer multiple options and to give the child the necessary feedback. Although there is an expectation that the study habits of a child raised in this way will be positive, a detailed examination of the topic is needed. For this purpose, the literature of the study will be given under the titles of the importance of parental attitudes in raising children, gifted children and their characteristics, the study habits of gifted children and the role of parents in the development of gifted children study skills.

The Importance of Parental Attitudes in Raising Children

Parents are the first educators who provide opportunities for the child to improve socially, emotionally and cognitively. The interaction between parents and child identifies the position of the child in the family and shapes his feelings, ideas, reactions and personality. In other words, the perceptions of a child about himself and the world and his reactions towards the environment are affected by the attitudinal patterns of his parents (Erdoğan and Uçukoğlu, 2011). The area of influence of the parents on the child is very wide. Parents are both the closest people in the 0-6 age range in fulfilling all needs of children and the first teachers of their children. When it is considered that the developmental bases of human personality are introduced in the 0-6 age range, the importance of parental role in the identification of educational identity is understood better. The status of the child in the family, the value earned and the identity developed are the determinants of identity, status and value that he will gradually gain in society (Gordon et al., 1993). Parents can affect their children's feelings, thoughts and behaviors from birth via their attitudes. The child-raising attitude, which refers to these attitudes, is defined as the whole of the attitudes, behaviors and expectations that are directed towards the child (Darling and Steinberg, 1993).

When literature is examined, it is seen that parental attitudes are classified in different forms. For example, Yavuzer (2014) has shown that parental attitudes are grouped under six headings: oppressive and authoritarian attitude, loose attitude (child-centered family), imbalanced and unstable attitude, irrelevant and indifferent attitude, reassuring, supportive and tolerant attitude, while Bakhla et al. (2013) grouped them as democratic, authoritarian and permissive. Likewise, there are different classifications of different researchers regarding the attitudes of parents in the literature (Baumrind, Larzelere and Owens, 2010; Filiz & Yaprak, 2009, Hibbard and Walton, 2014; Kuzgun, 1972). This study is based on the four dimensions that Baumrind (1966, 1971) revealed in his studies: democratic, authoritarian, permissive and overprotective parental characteristics. According to this, authoritarian parents try to control their children's attitudes and behaviors through senior authority. For these parents, obedience is at the top of everything. It is difficult to reach these parents in an emotional

sense, and control, punishment, power display are in the forefront of their attitudes and behaviors. These parents may be more anxious and protective as well as refusing (Aytemiz, 2010). Democratic parents encourage their children verbally and canalize them into logical and purposeful behaviors. When children have objections, they explain their ideas based on reasonable grounds and do not try to control children with prohibitions. They have a warm and sensitive relationship with their children, but they also maintain control. Permissive parents exhibit acceptance and tolerance for their children's acts and avoid punishing their children. They are often seen as a resource for children to reach their wishes because they allow children to organize their own activities and to apply their own decisions. Control is practically avoided; they do not encourage their children to adhere to the rules. These parents try persuading method to reach their goals and there is little expectation from the children about home-related responsibilities. Over protective parents intervene in every behavior of the child with the thought that the child can not be self-sufficient and with the sense of protection (Karasan, 2015). They avoid giving responsibility to the child. By arranging the activities of the child instead of the child, they try to solve the problems experienced by the child. As a result of excessive control and care, a personality with over-dependent, insecure, emotional injury is developed.

Gifted Children and Their Characteristics

Gifted children are the individuals who shows extraordinary performance in learning, abstract thinking and in some other areas. (in the top 10 % of the population) (NAGC, 1995). These areas include special academic ability, general ability, creativity, leadership and visual / performance arts. Renzulli (1978) uses the term gifted behavior instead of giftedness and defines giftedness as the intersection of general ability or special academic ability, creativity and task commitment. Clark (2008) defines gifted children as being curious, asking too many questions, being independent in their thoughts and behaviors, able to identify the contradictions between ideas and behaviors, having an unusual memory, able to think flexible and logically also showing originality, creativity in their areas of interest. She also emphasizes social and emotional characteristics of gifted such as hypersensitivity to the expectations, feelings of others, intensity, idealism, sense of humor, sense of developed justice. Silverman (1998) mentioned other characteristics of gifted children like long attention span, extraordinary energy, enjoyment of early reading, questioning authority, high-level imagination and skillfulness in puzzles. Children who exhibit the majority of these behaviors are considered gifted. On the other hand, there is no such thing as "a typical gifted child." Giftedness is a phenomenon that involves individual differences. Definitions related to giftedness are discussed from two different perspectives: mystery and mastery. From the perspective of the mystery model, gifted children are born with high potential and often get high scores from intelligence tests. Their abilities are fixed. Teachers and parents think that they know and do everything they can, and it is unclear what to do about their education after the diagnosis of giftedness in this model. On the other hand, in the mastery model, giftedness is described as the incompatibility of the child development with the education program offered to him. For this reason, it is necessary to make the education program suitable for gifted children (Matthews and Foster, 2005). There are common myths in the society, especially for gifted children. The most important of these is the myth that they are successful in the academic sense and the mystery model supports this myth. On the other hand, it is usually not possible to mention about academic achievement if they aren't guided and their effective working skills improved.

Study Habits of Gifted Children

Parents' attitudes are influential on many subjects ranging from children's personalities to their academic achievements. Study habits as one of these consist of studying condition, motivation, focusing on goal, self-management, use of time, attitudes towards teachers, and attitudes towards education in general and preparation level (Burson, 1985, 23; as cited in Çetin, 2009). The behaviors that should be targeted to develop study habit in the student are learning how to study, deciding on the use of various study skills and raising the person's self-responsibility (Garcia, 2006). It is important that students should be taught advanced learning strategies so that they can handle new information and acquire new skills and meet more challenging learning needs. At the same time, these students

need to earn advanced study habits (Evans, 2004). As a matter of fact, it is a necessity for the students to have efficient study habits when considering that success can be achieved by studying effectively rather than studying hard (Küçükahmet, 1987). Since the students who can not have efficient study skills can not get anything in return for the time and effort they spend on learning, the success level of these students in the school and in the professional life will be low (Teker, 2002; Yılmaz, 1997). In the case of gifted students, parents and teachers often assume that they know how to study because of their superior abilities. However, the results of this assumption can be dangerous. Although gifted students may have special abilities, they may have shortcomings in other areas. Gifted students often need advice on organizing themselves. Most teachers assume that gifted students grasp effective studying skills, but gifted children are constantly being bombarded by their thoughts, so they do not know what to do first (Stamm, 1987). Most gifted students need to develop their academic habits and study skills. Gifted students usually make little effort to study during primary school. As a result, they can neither develop their working skills nor self-discipline that accompanies it (Coil, 2012). High school students, especially during high school are not enrolled in special schools for gifted. Although they are subject to advanced placement and honor classes, they are never truly academically challenged. Because of this, educating is the task of memorizing the information to be used for some time according to them. When students are confronted with a more rigorous and challenging curriculum, it becomes clear that they have inadequate working skills and habits. For this reason, it is necessary to help them to gain skills such as time management, organization of information, studying in chunks, note-taking, and maintaining their motivation from young ages (Erlandson, 2015). Gifted students are learning fast, having a distinctive learning style and teaching them the skills to study gives them the opportunity to organize their thoughts and times (Treffinger, 1975). Gifted students are perfectionist so being organized takes pressure from them and enable them to control their learning. They are curious and observant so studying skills enable them to reach resources independently. They are rational, analytical and organize information in new forms. Timing and planning helps them to see the big picture. They are sensitive, identifying goals for them and expectations help them to feel stronger and protect themselves from peer criticism (Rimm, 1985). The resulting success is motivating for new learning. For this reason, improving the planning and organization skills of gifted (daily and weekly planning, listing the things to be done before going to school and ordering do list 1-10 points before going to school, during and after school) and teaching them study skills such as being ready for the courses, recording assignments on a special notebook, tidiness necessary from the primary school years. Teaching memorization and interpreting techniques, teaching points to be considered in the exams, teaching writing and taking notes are other important subjects (Stamm, 1987). The researches reported that 50% of gifted students are underachievers (Hoffmann, Wasson & Christiansan, 1985; Rimm, 1987 Akt: Hoover-Schultz, 2005) and some precautions should be taken to prevent the loss of this potential. Gaining effective study skills of this group can solve their problems about fearing of failure, setting unrealistic goals (Rimm, 1985) and realizing relationship between academic achievement and effort (Crittendon, Kaplan, and Heim, 1984). Some students see their failures as their own, not their teachers. For this reason, some gifted students who are underachievers can seek help in taking responsibility for school work and breaking the cycle of failure. Educators and families should not underestimate the importance of study skills for gifted children and should not think as that "he/she should know how to study because he/she is gifted." Teaching study skills will enable gifted students to build their own logic of work, but more importantly, to help the gifted child to accept responsibility for the relationship between effort and success. There are four reasons for gifted children to succeed under their potential; the first is that the child has a problem such as physical, cognitive or emotional learning difficulties. The second is the nonconformity between the child and the school, the third is the negative attitude of the child to the school, and the fourth is the student's lack of self-regulation and study skills (Siegle and Mccoach, 2005). Most gifted students lack of self-management strategies, such as time management and study skills. Because gifted students do not challenge in the early years of school so they cannot develop their self-management skills. Good memory and fast processing skills in early grades compensate for the lack of note-taking and other study skills. Often educators try to teach them these skills before students need it. This process frightens both the teacher and the student. Students usually learn their self-regulation skills when they need these skills. Exposing gifted children to a challenging curricula from early grades and throughout their school life, their skills in self-management improve (Siegle and Mccoach, 2005). To support this

process, the role of the parents is very important especially teaching them study methods and techniques and gaining them the responsibility of study.

Role of Parents in the Development of Gifted Children Study Skills

Gifted children also need parents' guidance on many subjects like their peers. Being gifted does not mean that they are good at all. One of the issues they need guidance is their study habits and skills. Effective study is a habit that needs to be earned from early ages. Parents should encourage their children to do something spontaneously from an early age and try to give them a habit of continuing their work to the end to make them earn responsibility to study. Thus, it can be very beneficial to provide guidance services to the students, even families, from the beginning of the education (Tümekaya and Bal, 2006).

The gifted children can easily learn because of their capacity, so they cannot develop their study skills and study habits. The ability of a gifted child to achieve success or not to be challenged at school can prevent the development of effective study habits of gifted children (Özbay, 2013). Parents should first of all be aware of this situation, provide their children with academic and social areas that will compel them, and especially teach their children a number of strategies and techniques to improve their study skills and study habits. These techniques are mainly related to study skills. These techniques can be developed by working with the student one-to-one and with instant feedback, and can be developed with the help of a working with a coach. The school does not force the gifted students most of the time, so the gifted students have the potential to underachieve in the following years. In this case, it is important for parents to establish an effective communication with the school and to enable strategies such as acceleration, grouping, enrichment and differentiation, which are the lifesaving strategies in the learning of gifted students. In the acceleration, the students are provided with information from the upper subjects or classes; in grouping, the student will come together with the gifted children like himself or to take lessons with the same level groups. In enrichment, the student is given the opportunity to learn about different areas of the subject by presenting a wider and richer content. While differentiation all the content, techniques and methods are adjusted according to student readiness, interest and learning profile (Kaplan-Sayı and Emir, 2017). Also the assignments are presented in accordance with the student. In this case, the student is expected to receive the ideal training so as to develop effective study skills and habits by challenged mentally. Besides, the main point is that the parents have an effective communication with their children. With an effective communication and effective observation, it will be much easier to identify areas where the child is troubled about his or her study skills. Also the solution of the problem would be possible with the effective communication and cooperation of the child and the parents.

As can be seen, the influence of parents' attitudes and behaviors on the study habits can not be denied. One of the most important factors that constitute the study habits is the use of effective working methods called as 'studying methods' in the literature but called as 'study quality' in our study. These methods include the methods and acts that can be learned through education such as coloring text, underlining text, taking notes, summarizing, etc (Garcia, 2006). Another important factor that constitutes the study habits is the "study responsibility" in the literature, which is usually accompanied by feeling independence in self-stimulating learning (Calikoglu, 2009). The relevant literature emphasizes that the responsibility of studying is related to motivation and that children should first be enthusiastic. At this point, parental attitudes have an important place. Because the parents who have authoritarian attitudes put pressure on the children and make negative comparisons can not generate the children's enthusiasm to study rather they dampen it. In such a case, children usually spend time in their studyroom or table pretending that they are studying and thus they fool their parents who wishes their children to study and themselves. However, if this claim is from children themselves, the only authority to believe is the student himself, no such deception will be required (Yenilmez and Özbey, 2007). On the other hand, in overprotective families, the child does not have autonomous behaviors so it is not possible for the children to have study responsibility and study habits. Among the parental attitudes the healthiest and most appropriate one for the gifted is democratic attitude. Democratic parents have close relations with their children and controls their children rarely so social competence and self-confidence develop in the highest level in these parents' children. Children developing self-confidence are more ready to take risks in new environments. The fact that gifted children cannot succeed in their potentials arises from their insufficient study habits. The child who wastes most of his time and enters into an effort to produce something at the

last moment cannot naturally have the chance to feel pleasure about his hidden power. This kind of problem is not encountered in families who forms an internal discipline in their children (Özbay, 2013).

Many studies have shown that parental attitudes have a significant impact on the success in different academic areas ranging from science fields to engineering such as mathematics, foreign language, science and characteristics like discipline; also on total academic achievement in learning and teaching process (Başol & Zabun, 2014; Bicknell, 2014; Bingham, Jeon, Kwon and Lim, 2017; Garn, Matthews & Jolly, 2010; Perera, 2014; Turner, Chandler & Heffer, 2009). From this view, the relationship between parental attitudes and study habits which are increasingly important in the 21st century will be emphasized in this study.

In this scope, the research questions are as follows:

- Do the gifted children's study habits-study quality and study responsibility- vary according to age and gender?
- Is there a relationship between the attitudes of the parents and the study habits- study quality and study responsibility-of the gifted students?

METHOD

In this study, the relational screening model was used. Relational screening model was preferred in order to determine the relationship between two or more variables and to obtain clues about the causal relationship between variables (Büyüköztürk, Kılıç- Çakmak, Akgün, Karadeniz and Demirel, 2012).

Participants

The universe of the research consisted of students between 7-12 years of age who were diagnosed as gifted in Istanbul in 2016-2017 and their parents. The sample consists of 100 gifted students and 100 parents selected from this group by means of convenience sampling. This kind of sampling involves taking sample elements that the researcher can easily reach. Convenience sampling is preferred in terms of being practical and economical (Monette, Sullivan and De Jong, 1990). This method of sampling was chosen because it was difficult to reach gifted students and it was impossible to determine all of the elements of the universe. In the study, 100 students who were enrolled an institution presenting enrichment courses for gifted students and their parents were included. Of these gifted students, 61 (61%) were boys and 39 (39%) were girls. The distribution of children by age was 48 (48%) in the age group 7-8; 52% (52%) were aged between 9 and 12 years. The family group consisted of 77 mothers and 23 fathers. Parental attitudes are based on the parent who communicates most with the child. For this reason, majority parental attitude information is obtained from mothers but some of them are obtained from fathers.

Table 1. Descriptive Characteristics of Children

Tables	Groups	Frequency(n)	Percentage (%)
Gender	Boys	61	61,0
	Girls	39	39,0
	Total	100	100,0
Age	7-8 Ages	48	48,0
	9-12 Ages	52	52,0
	Total	100	100,0

Children are distributed as 61% boys and 39% girls. According to the age , 48% of them are 7-8 years of age and % 52 of them are between 9-12 years of age.

Table 2. Parents Gender Distrubition

Tables	Groups	Frequency(n)	Percentage (%)
Gender	Male	23	23
	Female	77	77
	Total	100	100,0

Parents who participated the study are formed from 23 fathers and 77 mothers.

Data Collection Tools

As data collection tools in the study, the scale of study habits applied for the gifted children and the parental attitude scale applied to their parents were used.

The study habit scales were developed by Calikoglu (2009) in order to obtain information about the study habits of the students. It was applied on 701 students and its total score average was found as 74.60, standard deviation 10.8; the highest score 92 and the lowest score 32. The Study habit scale's study quality sub-factor average score was 74, 60, the standard deviation was 4.8, the highest score was 36 and the lowest score was 12 for this sub-factor. The Study Responsibility sub-factor average score was 45. 3, the standard deviation was 7.2, the highest score was 56 and the lowest score was 17. Initially based on literature review, the scale of 59 items was reduced to 38 items after piloting and expert opinions; and the final version included 23 items as a result of validity and reliability studies. There were a total of 23 items, with 9 being positive and 14 being negative. Each of the items in the scale was arranged with four alternatives, "always", "often'", "occasionally" and "never", to be answered by marking one of the choices. Reliability of the Study Habits Scale was determined by using three different methods; Cronbach α , Spearman Brown split half and test-retest. The coefficients of the scale were 0, 88, 0, 87 and 0, 83, respectively. The validity of the scale was established in terms of its factor structure, concurrent and construct validities. Concurrent validity coefficient of the scale was 0,45. Sufficient evidence was found for its factor structure and construct validities. The Cronbach's Alpha value of the Study Habits Scale was found to be 0.72 in this study.

Parental attitude scale was developed by Demir and Şendil (2008) in order to determine the parental attitudes of mothers and fathers when raising their children. To this end, a 62-item scale consisting of four dimensions, "democratic", "authoritarian", "overprotective" and "permissive". For the validity and reliability of the scale, the data were collected from 420 mothers and fathers with low, moderate and high socioeconomic status. In order to test the construct validity of the scale, the scale was applied to 56 parents with a different scale that measured parental attitudes. As a result of the principal components and varimax rotation analyzes carried out in the scope of the studies, 16 items were removed. The scale took its last form with 46 items. As a result of the reliability analysis, Cronbach alpha coefficients were found to be .83 for "democratic" dimension, .76 for "authoritarian" dimension, .75 for "over protective" dimension and .74 for "permissive" dimension. In this study, the reliability of the Parental Attitude Scale, Cronbach's Alpha coefficient, was obtained as 0,74.

Table 3. Reliability Values of Scales

Reliability of Scales	Cronbach Alfa (α)
1. Dimension: Study Skills	.82
2. Dimension: Study Qality	.73
“Study Skills Inventory” total:	.72
“Parent Attitude Scale” total:	.74
1. Dimension: Democratic	.83
2. Dimension: Authoritarian	.76
3. Dimension: Overprotective	.75
4. Dimension: Permissive	.74

In the literature, values above .70 are considered to be reliable (Cohen, Manion and Morrison, 2007; Tezci, 2016). According to these values, it can be said that the internal consistency of the measuring instrument is high in this study.

Data Collection Process

After the data collection tools were prepared, appropriate dates were determined and 100 students between the ages of 7-12 years who were enrolled in an institution that offered enriched education in Istanbul in 2016-2017 and their 100 parents were invited for the study. Approval of the families was obtained for the application of scales. The data collection process was carried out by the researchers themselves on 15-22.10.2016 between 09.30-14.00 hours with the participation of volunteer students. The students who participated in the research were explained the importance of research and stated that they did not need to write their names in order to ensure their sincerity while responding. Also, the attitude scale to be filled by the families was explained in a seminar and the importance of the research is emphasized. The scale was given to the families in a closed envelope and the families were told that they should fill the scale and send it to the center with the student. Since the families of 20 students out of 120 students did not send the scales back, 20 students were excluded from the study.

The Statistical Analysis of the Data

The data obtained in the study were analyzed using SPSS (Statistical Package for Social Sciences) for Windows 22.0 program. Descriptive statistics of gifted students' study habits scores and their parents' attitude scores were examined. The weighted arithmetic mean was calculated because the item numbers in the subscales of both scales were different. Independent t-test was used to examine whether the students' study habits scores differed by gender and age. In order to investigate the relationship between study habits and parental attitude, the Pearson Product Moment Correlation Coefficient and regression analysis between these two continuous variables were calculated.

FINDINGS

The findings of this study which examines the relationship between study habits and parental attitudes in gifted children are presented in this section. In the analysis, firstly the scores obtained from the common parental attitudes and study habits of the participants were examined. Unrelated group t test was performed to determine whether the scores differed by age and gender; also pearson correlation test performed to determine the correlation between parental attitude and study habits. With regression analysis the direction of this correlation were examined.

Table 4. T Test Results to Determine Whether The Study Habits Differ According to Gender

Subtests	Groups	N	\bar{X}	SS	$Sh_{\bar{x}}$	T	S_d	p
Study quality	Boys	61	33.9	6.9	.89	1.6	98	.73
	Girls	39	31.5	7.4	1.1			
Study responsibility	Boys	61	46.1	14.9	1.9	-1.5	98	.18
	Girls	39	50.7	13.0	2.0			
Study Habits in Total	Boys	61	80.0	17.1	2.1	-.65	98	.25
	Girls	39	82.3	16.1	2.5			

As seen in Table 4, there was no difference between the groups in terms of study quality, responsibility for studying and total working habits. Based on this finding, it can be said that gender has no effect on study quality, study responsibility and total study habits.

Table 5. T Test Results to Determine Whether The Study Habits Differ According to Age

Subtests	Groups	N	\bar{X}	SS	$Sh_{\bar{x}}$	T	S_d	p
Study quality	7-8	48	31.7	6.3	.91	-1.7	98	.36
	9-12	52	34.2	7.7	1.0			
Study responsibility	7-8	48	49.3	13.7	1.9	.96	98	.66
	9-12	52	46.5	14.9	2.0			
Study Skills in Total	7-8	48	81.1	16.8	2.4	.08	98	.73
	9-12	52	80.8	16.6	2.3			

As it is seen in Table 5, in terms of study quality, the average of 9-12 age group was found to be high and in terms of study responsibility and total study habits the average of 7-8 age group was found to be high, there was no statistically significant difference between the groups according to age.

Table 6. Parental Attitude Descriptives

	N	Mean	Ss	Min.	Max.
Democratic	100	4.38	0.65	3.18	4.88
Authoritarian	100	2.01	0.85	1.18	3.63
Overprotective	100	3.09	0.99	1.50	4.66
Permissive	100	2.40	0.88	1.11	4.66

Table 6 shows the participants' parental attitude sub-dimensions' mean and standard deviation also minimum and maximum values per items. According to this, the mean score of the parents who participated in the research for democratic dimension was 4.38; for authoritarian dimension 2.01; for overprotective dimension 3.09; and for permissive dimension 2.40.

Table 7. Parental Attitude and Study Habits Sub-Dimensions Descriptives

	N	Mean	Ss	Min.	Max.
Study quality	100	3.40	1.01	1.21	4.28
Study responsibility	100	3.93	0.85	1.13	4.56
Study habits in total	100	3.69	0.97	1.51	4.71

Table 7 shows the participants' study habits' mean and standard deviation also minimum and maximum values per items. According to this, participant children who have been diagnosed as gifted the mean score for study quality is 3.40 while study responsibility mean score is 3.93 and study habits in total mean score is 3.69.

Table 8. Correlation Analysis Examining the Relation between Parental Attitude and Study Habits

	Democratic	Authori- tarian	Overprotective	Permissive	Study quality	Study Responsibiliy	Study Habits in Total
Democratic							
Authoritarian	r -0,409** p 0,000						
Overprotective	r -0,187 p 0,062	0,277* 0,005					
Permissive	r -0,112 p 0,268	0,364** 0,000	0,557** 0,000				

Study quality	r	0,227*	-0,117	-0,101	-0,141		
	p	0,023	0,247	0,319	0,162		
Study responsibility	r	0,031	-0,065	-0,042	0,108	0,088	
	p	0,762	0,523	0,676	0,287	0,382	
Study Habits in Total	r	0,125	-0,106	-0,080	-0,154	0,510**	0,902**
	p	0,216	0,292	0,428	0,126	0,000	0,000
Parental Attitudes in Total	r	0,174	0,537**	0,734**	0,783**	-0,046	-0,078
	p	0,83	0,000	0,000	0,000	0,650	0,439
							0,088
							0,386

*<0,05; **<0,01

When the relationship between parental attitudes and study habits was examined, there was a weak positive correlation between the study quality and the democratic dimension ($r = 0.227$; $p = 0.023 < 0.05$). Apart from that, there was no correlation between the study quality and any parental attitude. There was no significant relationship between the dimension of the study responsibility and the total score of study habits and the parental attitudes in any dimension.

Table 9. Examining The Effect of Democratic Parental Attitude on Study Quality

Dependent Variable	Independent Variable	β	t	p	F	Model (p)	R^2
Study quality	Fixed	14,021	1,697	0,093	5,325	0,023	0,052
	Democratic Dimension	0,256	2,308	0,023			

The regression analysis used to determine the causal relationship between the democratic dimension and the quality of the study was found statistically significant ($F = 5,325$; $p = 0,023 < 0.05$). As a determinant of the level of the study quality, it was found that the relation with democratic dimension variables (explanatory power) was weak ($R^2 = 0.052$). However, as a result, the level of democratic attitude displayed by the parents increased the quality of the study ($\beta = 14,021$).

DISCUSSION, RESULTS AND SUGGESTIONS

In this study, gifted children parents attitudes, the effects of gender and age on study quality, study responsibility and total study habits, the relationship between parental attitudes and study habits were investigated.

According to the findings obtained in the study, it could be stated that the attitude attended by the participant parents was democratic and overprotective parental attitude. This finding coincides with the results of Afat (2013) and Ogurlu, Yalın, Birben (2015) conducted on the parents of gifted children. Research has shown that there is a higher level of harmony in gifted children's families in which mutual supportive relationships are given importance and family members display a clear communication (Abelman, 1991; Cornell and Grossberg, 1987; Karnes and Shwedel, 1987). In our country, families often have different attitudes in different situations, depending on the level of risk. But the common point we perceive in both of these attitudes is giving the child a route to do something or offering multiple options and giving the child the necessary feedback. It is expected that the study habits of a child raised in this way will be positive.

There were no significant differences in children's study habits scores in terms of gender in the study. In the case that study habits were examined regarding the age factor, although the average of 9-12 age group was higher in terms of study quality, the average of 7-8 age group was higher in terms of study responsibility and total study habits; there was no statistically significant difference between groups in terms of age. Çalikoğlu (2009) reported in her study of examining the relationship between the study habits and the perfectionist characteristics of the gifted students, according to the results of 701 participant sample in reliability study, there was a significant difference in favor of females regarding study habits total scores and the subdimensions of the study quality and study responsibility and according to the class variable, the average score of the study habits, study quality and study responsibility of 5th grade group was found as higher than the 6th grade group. In the other part of the

same study conducted with the participation of 34 gifted students; there was no significant difference between the genders and between the fifth and sixth grades in terms of the total score of the study habits, the study quality and the study responsibility. As can be seen, the study conducted in the large sample group is consistent with our findings in terms of age and the study habits of the younger ones were found higher. The study with small sample group of gifted students supported our findings in terms of gender. The non-overlapping age part is thought to be related to the number and structure of the sample.

When the relationship between parental attitudes and study habits was taken into account, there was a weak positive correlation between the study quality and the democratic dimension, the relations between the other variables were not statistically significant. Accordingly, democratic parental attitude was one of the determinants of the level of the study quality or the level of democratic attitude displayed by parents increased the study quality. Study habit, in some studies in the literature, consisted of study environment, personal characteristics, time management, study method and attention sub-factors (Çetin, 2009); in some studies, it was explained as starting and maintaining a course, deliberate study and attendance, writing notes, having reading habits, using preparing techniques for examinations, repeat for learning and use of library written sources (Vergili and Atılgan, 1998); in other studies, it was taken as study with breaks, exact learning, using planned study method, using reading method, note taking technique, making listening activities, recalling, having motivation, test doing, time management (Yenilmez and Özbey, 2007). In our research, study habits included metacognitive activities such as taking notes, repeating topics, benefitting from different sources, identifying deficiencies in the subject, using a dictionary, avoiding distractions, and conveying what was learned with own sentences. It is expected that such forms of behavior could only be possible in a democratic environment where child is offered alternatives and explained reasons, territory of freedom is defined and given.

Moreira,Dias, Vaz, Vaz (2013) examined the predictors of academic performance in their study with 384 Portuguese secondary school pupils and found nine factors that predict persistence and motivation. Of these, the five were 24.6% of the total variance; these five factors were socio-economic level 9.3%; participation of the family in the education process 6.4%; academic objectives 4.9%; student teacher interaction 2.6% and academic skills 1.1%. As can be understood, family involvement is very important for academic performance.

Garn et al. (2010) interviewed 30 families of gifted children in order to demonstrate the contributions of families on their children's study habits. Three themes emerged as a result that families demonstrate to promote academic motivation of their children. These themes were family as specialist, supportive family and behavior change-focused family. Family as specialist theme demonstrated relations between family attitudes and academic motivation; supportive and behavior change-focused family themes are about specific approaches that parents used to improve academic motivation at home. 80% of the parents stated that they saw themselves as specialists in understanding personal characteristics of their children and therefore in improving academic motivation, but they did not always feel successful in shaping study habits. 60% of the families stated that it was an intense and frightening process to develop academic motivation of gifted children. For this reason, families used very different strategies. A way that was useful one day did not work another day. More than half of the families complained about the problems related to school homework and that the repetitive work harm the climate at home. 80% of the families used different strategies to reinforce academic motivation: 25 of 30 used interactive teaching, 21 of 30 used reinventing learning environments, 12 of 30 used associating homework with interests, and 14 of 30 used to develop internalizing. Restructuring the environment was a very common application with 70%. This includes helping with time management, providing support and materials to complete assignments, segmenting assignments into doable parts. The rate of logical explanation for the gifted children to internalize the importance of school was 47%, or the combination of homework with areas of interest was 40%. Behavior change was seen in 30% of 9 people out of 30.

In fact, parents have a key role in the improving study habits of the gifted children and their school success. Parents with gifted children who do not play this role offer the greatest contribution to their children's "underachievement". Peterson (2001) conducted a study with the participation of 31 people who were professionally engaged and successful but who were underachiever during the adolescence. He examined on these people's experiences of underachievement, specifically focusing on their experiences of starting, continuing and reversing the underachievement. One of the striking findings of the study was the perception of the participants that they were deprived of family support. 35% of all participants indicated that none of their parents gave academic support, and 32% indicated that none of their parents encouraged them for other achievements. Effective parents knew that they would make a positive difference in the lives of their children and therefore contributed to the lives of their children at a high level (Hoover-Dempsey et al., 1992).

In summary, parents who affect their child's study habits should exhibit positive attitudes towards their school, study and work life; share it with their children, adopt a more supportive family status and support their children towards obstacles, motivate them, follow their children and give feedback, encourage them and, most importantly, perform the five family roles mentioned above effectively in required stages and times in order to make them to gain study habits. Incorrect attitudes of student parents, indifference, oppression, harshness, lovelessness or extreme interest in student cause them to feel frustrated and become uninterested in their studies (Küçükahmet, 2001). For this reason, the need for the parents to adopt a democratic attitude and to be consistent in performing this attitude in all events is another important issue.

Although the study revealed results that would contribute to the field, there are certain limitations in the research. The fact that the research group is receiving a differentiated education for gifted students creates a limitation in generalizing the results. The inclusion of gifted students, who do not receive any special support into such research is important in terms of the generalizability of the research. In addition, both the attitudes towards studying and the parents' attitudes were determined by scales based on self-assessment. There is a risk of reflecting ideal rather than current situation in the self-assessment based scales. Considering the disadvantages of the self-assessment scales further work with objective assessment tools will yield more objective results. As the study habits are multidimensional other factors that affect study habits should be included in the research. In addition, comparative studies in a sample of gifted and non-gifted students would contribute to the field. Considering that there is also a link between study habits and parental attitudes, the intercultural comparison study would contribute to the understanding of the characteristics related to study habits of the gifted children.

According to the results of the research, it can be suggested that;

- Families can be provided with trainings on relation between parents attitudes and study habits
- A similar research can be carried out with a group of gifted students who do not receive special education and with a larger sample group
- A new research about on this issue can be supported with a qualitative part
- The same study can be carried out including cross-cultural comparison.

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The Effects of Home-based Responsive Teaching Curriculum on Interactional Behaviors of Mothers and Their Children with Autism Spectrum Disorder: A Mixed Design Study in Turkey

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Abstract

The effectiveness of Responsive Teaching (RT) Early Intervention Program which is one of the relationship-focused interventions (RFI) on five children diagnosed with autism spectrum disorder (ASD) and their mothers was studied. The study was conducted in “Mixed Research Design” in which both quantitative and qualitative data were collected. Quantitative data of the study were collected through single group pretest-posttest model and qualitative data were collected from field notes, diaries, video analyses and interviews. Findings gathered from pretest and posttest quantitative results revealed that the RT program was effective on interactive behaviors of five children with ASD and their mothers. Qualitative results supported the quantitative findings and revealed that mothers stated they became more sensitive and responsive to their children behaviors by using RT strategies.

Keywords: Relationship-focused interventions, Responsive teaching, Autism spectrum disorder, Mixed design.

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INTRODUCTION

Social and interactional deficits are one of the diagnoses criteria of Autism Spectrum Disorder (ASD) (DSM-V, 2013) and this limitation of social and interactional behaviors effect parent-child interaction especially in early childhood years (Diken, 2009). Studies that have been conducted on parent-child interaction for years have showed that interaction types of parents had significant effects on cognitive, communicative and socio-emotional developmental areas of their children in early childhood (Cunningham, Reuler, Blackwell and Deck; 1981; Gutstein, Burgess and Montfort, 2007; Kim, Mahoney and Perales, 2003; Mahoney, Boyce, Fewell, Spiker and Wheeden, 1998; 2005; Mahoney, 2004; Youn-Kong and Carta, 2011). Even some other studies revealed that this effect was particularly related to responsive behaviors of families (Mahoney and Perales, 2003; Kim and Mahoney, 2004). The term “being responsive” usually refers to parents’ suitable and sensitive behaviors regarding developmental level of their children, and their decreasing adult-oriented speeches and instructions (Trivette, 2003; Young-Kong and Carta, 2011). On the other hand, studies showed that when parent-child interaction behaviors were compared between typical developmental children and children with developmental disabilities including ASD, the parents who have children with developmental disabilities are more directive and less responsive to their kids in Turkey (Ceyhun, Özdemir, Töret and Özkubat, 2015; Diken, 2012; Diken and Mahoney, 2013).

The implementations that aim to teach responsive interaction strategies to parents to turn them into responsive individuals to their children are called Relationship Focused Implementations (RFI) (Mahoney *et.al.*, 1998; Mahoney and Perales, 2003). Examining RFI literature, there exist more than 100 defined responsive strategies under various programs and names, and through these strategies, the parents of the children who were affected by disability were aimed to become more responsive towards their children which would contribute to the development of their children (Mahoney, 2009; Young-Kong and Carta, 2011).

One of the RFIs that is used in responsive interaction strategies in parent-child interaction is Relation-Based Intervention Curriculum called Responsive Teaching (RT). RT is a program that particularly aims at supporting development of children aged between 0-6 who was affected by disabilities; teaching responsive interaction strategies to parents or primary caretakers to make them more responsive towards their children during their daily routines; and contributing to children’s developments by this way. RT curriculum is developed by Prof. Gerald Mahoney and Prof. James MacDonald in 2007 and RT includes 66 responsive interaction strategies. The program consists of provide one or two of these strategies to care-giver in one-to-one format at home or school environment in a session at least six months period.

Research conducted on RT showed that the program provided significant differences in interaction behaviors of children diagnosed with ASD, Down syndrome and developmental disorders and their parents; the children participated in this program showed progress in cognitive, communicative and socio-emotional developmental areas; and these progresses were related to high amount of responsive interaction behaviors of parents in United States of America, Korea and Turkey (Karaaslan, Diken and Mahoney, 2011; 2013; Karaaslan and Mahoney, 2013; Kim and Mahoney, 2004; 2005; Mahoney and Perales, 2003; 2005).

The importance of parent-child interaction, the limitations on interactional behaviors in parents who have children with ASD and the positive effect of precious studied including interactional strategies shows us that it is important to support parents if they have problems in interactional behaviors between their kids and it is possible to improve children’s interactional behaviors and developmental behaviors by supporting parent’s interaction behaviors.

Thus, the study primarily aimed to find out how RT affected interaction behaviors of the children diagnosed with ASD and their mothers and to show how the engagement of children changes over the course of a brief relationship focused intervention by assessing quantitative data analyses methods as previous studies. On the other hand, although there are findings related to the effectiveness

of RT in literature, limited information about the strategies and procedures on RFIs is reported to exist. Deriving from these needs, the study secondarily aimed to describe mothers' and implementer's perceptions of their implementing responsive interaction strategies by using qualitative data analysis methods. Around that purpose the study questions are: (1) How are RT effect the interaction behaviors of mothers who have children with ASD, (2) How are RT effect the interaction behaviors of children with ASD (3) Is there any relationship between mothers and children interaction behaviors, (4) Is there any relationship between mothers' interaction behaviors and children's developmental progress (5) Which strategies are commonly used by mothers (6) Which strategies are commonly found difficult to use by mothers and (7) How the RT intervention effect other family members? Findings received from this study are considered to provide a support for scientific justification of the RT; moreover, providing a better comprehension of strategies that are used, the qualitative data gathered from the study are regarded to contribute to the further implementations and research.

METHOD

Participants

We looked for some prerequisite features in participants before started the study. First the participants should had diagnosed with ASD, second, they should had been in under 6 years old, and third children and their mothers should need support on parent-child interaction. Finally, after pre-assessment process, five children aged between 34 and 45 months diagnosed with ASD and their mothers who were their primary care takers and had not joined any mother-child interaction program before participated study. During the study, all the participant children were undergoing individual and group education at a private special education and rehabilitation center, and two of them were nursery school students at the same time. We evaluated Autism levels of the children through Gilliam Autism Rating Scale-2-Turkish Version (GARS-2-TV; Diken, Ardic and Diken, 2011), and developmental levels through Gazi Early Childhood Evaluation Tool- GECET (Temel, Ersoy, Avcı and Turla, 2005) prior to the study. Demographic characteristics of child participants and their autism and developmental levels are shown in Table 1. A special education teacher implemented sessions who had RT implementation certificate from Prof. İbrahim H. Diken who is the authorized person on RT in Turkey. Implementer was a PhD student at Special Education Program at the same time. She had ten years' experience working children with ASD and conducted one pilot study on RT with three participants and their mothers in a group format in one month before started to main study.

Table 1 Ages and Autism and Developmental Levels of Child Participants

	CP 1	CP 2	CP 3	CP 4	CP 5
Calendar Age	42,5 months	36 months	34 months	45 months	36 months
Psychomotor Development	16-18 months	22-24 months	22-24 months	22-24 months	22-24 months
Cognitive Development	12 months	16-18 months	13-15 months	13-15 months	16-18 months
Language Development	7 months	12 months	11 months	11 months	12 months
Socio-Emotional Development	10 months	19-21 months	19-21 months	19-21 months	19-21 months
Autistic Disorder Index (GARS-2-TV)	97	77	110	90	70
Probability of Autistic Disorder Incidence (GARS-2-TV)	Considerably High probability of Incidence	Probability of Incidence	Considerably High probability of Incidence	Considerably High probability of Incidence	Probability of Incidence

CP: Child Participant

Research Design

We designed the study with Convergent Parallel Design which is one types of Mixed Research Designs that allows using both quantitative and qualitative data collection methods (Creswell and Plano Clark, 2011). We collected quantitative data of the study through single group pretest –posttest model to examine mother-child interaction, and qualitative data through video analysis, field notes, diaries and interviews.

Procedures

We conducted implementation sessions individually with each mother-child dyad at their own homes one day a week. Each session lasted on an average of one and a half hour. We used The RT guide Turkish Version during intervention sessions. During the sessions, as suggested in manual of the RT, we used a four-step training procedure. First, researcher explained the targeted strategy and talked on discussion points related pivotal behavior. Secondly, the researcher interacted with the child and used the strategies with the child and at same time commented to mother while mother was observing. Next, mother implemented observed and explained strategies with her child by comments of researcher when needed. The last step was homework step in which researcher talked to mothers on how to transfer strategies focused on the session to daily routines. We planned to transfer two or three strategies for each session, and these strategies were identified in accordance with needs of mothers and their children. Intervention sessions lasted on an average of 10 weeks with each mother-child dyad.

Data Collection

Collection of Quantitative Data. We collected data related to interaction behaviors of mother and child participants who were the first dependent variables of the study through pretest and posttest method. In accordance with this aim, we used Maternal Behavior Rating Scale-Turkish Version (MBRS-TV; Diken, Topbaş and Diken 2009) to evaluate interaction behaviors of mothers, and Child Behavior Rating Scale-Turkish Version (CBRS-TV; Diken, Topbaş and Diken 2009) to evaluate behaviors of child participants.

MBRS-TV consists of three subscales which are “Being Sensitive-Responsive”, “Being Affective Expressive”, and “Being Achievement-Focused and Directive”. These three subscales consist of 12 items that rate parent behaviors. These items are “being sensitive, being responsive, being effective and being creative” under the title of “Being Sensitive-Responsive” subscale; “acceptance, enjoyment, expressiveness, warmth, praise” under the title of “Being Affective Expressive” subscale; and “being achievement oriented, being directive and interaction pace” under the title of “Being Achievement focused and Directive” subscale. Each item is rated with a score between 1 and 5. The aim in the implementation was to increase scores of mothers to (5) for “Being Sensitive-Responsive” and “Being Affective Expressive” subscales whereas to decrease their scores to (3) for “Being Achievement focused and Directive” subscale (Diken, Topbaş and Diken 2009).

CBRS-TV consists of two subscales under the titles of “Attention” and “Initiation”. Totally there are seven items rating interactive behaviors of children in these two subscales. “Attention, persistence, interest, and cooperation” are listed under the title of “Attention” and “initiation, joint attention, and affect” were under “Initiation”. Each item is rated between 1 and 5. The aim in the implementation was to increase the score of the child to (5) for all behaviors (Diken, Topbaş and Diken 2009). We made pre-post evaluations for both scales by recording and observing behaviors of mother and child dyads during free play times that lasted approximately 10 minutes.

Collection of Qualitative Data. We used video analyses, field notes, diaries and interviews to collect qualitative data of the study. The implementer observed the interaction between each mother-child dyad prior to each implementation session for five minutes once in two weeks, and then analyzed

mother-child interactions in this process. In addition, the implementer kept diaries and took field notes after each implementation session and kept the record of her own observations including her own ideas about for each implementation session and recorded the situations that were done or told by mothers through a voice recorder as field notes. We conducted semi-structured interviews with each mother and implementer interviewed with each mother at the end of the 10 weeks intervention in face to face. We prepared the interview questions with a second expert on qualitative research methods. Additionally, different questions were added belong to conversation.

Data Analysis

Analysis of Quantitative Data. We used Wilcoxon Signed Ranks Test to analyze the quantitative data gathered from pretest and posttests because of the numbers of our participants ($n: <7$) via SPSS software program. As a limitation for group empirical studies when use statistical analysis methods, we can just have the average performances of participants on effectiveness of independent variable and not being able to reflect individual performance of each participants. In order to suppress this limitation, we also showed raw data on interaction behaviors of mothers and children gathered from pretest and posttests with graphical analysis by using column charts.

Analysis of Qualitative Data. We itemized in a word document, all video records, field notes, diaries and interviews during the analysis of the qualitative data. We categorized some specific themes for each situation after the itemization. We started the analyses with video analyses and identified the themes “interactive behaviors of mothers”, “interactive behaviors of children”, “relationship between mother-child interaction behaviors”, “developmental behaviors of children”, “strategies that are used by mothers” and “other family members” from these analyses. Then, we divided each one of these themes into subthemes, and the data gathered from field notes, diaries and interviews were analyzed and reported under these themes.

Reliability

Inter-observer Reliability. A second special education teacher who had the RT implementation certificate and had also certificates for the scales that were used collected inter-observer reliability data related to quantitative data. We collected data for all pretest and posttest sessions, and we calculated inter-observer reliability by using the formula of “Agreement/Agreement + Disagreement X 100”. Inter-observer reliability average of mother participants was calculated as 85, 6% for pretest scores, and 94, 16% for posttest scores. As for child participants, their inter-observer reliability average was calculated as 81,42% for pretest scores, and 95% for posttest scores.

We used short confirmations and expert examinations provide reliability for qualitative data. With regards to this aim, a second expert on qualitative research methods joined the study as confirmation expert. During this process, the implementer e-mailed all document about themes and subthemes with the written reports of the interview. The implementer also gave verbal information via phone call to second expert. The second expert compared the results of the analysis and original copies, and confirmed the analysis.

Implementation Reliability. In order to evaluate whether independent variable was implemented as it was planned or not, we collected implementation reliability data from 30% of implementation sessions that were identified randomly. Second observer watched videos used RT implementation reliability form to collect implementation reliability data, and it was calculated by multiplying “partially” columns which RT guide required with 2 and “yes” columns with three. Following the calculations projected by RT program guide, we observed implementation reliability of the followed sessions at least 60 and above and reliability percentage was calculated as 95 %.

RESULTS

Quantitative Results related to Interactive Behaviors of Mothers

Findings related to pretest and posttest results of MBRS-TV subscales, “Being Sensitive-Responsive”, “Being Affective Expressive”, and “Being Achievement focused and Directive” are shown in Table 2, Table 3 and Table 4. Wilcoxon Signed Ranks Test results showed that there was a significant difference between pretest and posttest scores of “Being Sensitive-Responsive” with large effect size (Cohen’s $d=0,9$) and “Being Affective Expressive” with large effect size (Cohen’s $d=0,9$) subscales; however, there was not any significant difference between pretest and posttest scores of “Being Achievement focused and Directive” subscale.

Pretest and Posttest raw scores of MBRS-TV subscales and items in each subscale are shown in Table 5. Examining raw pretest and posttest scores of MBRS-TV, it was seen that five mothers had desired increase in terms of “Being Sensitive-Responsive” and “Being Affective Expressive” subscales. As for “Being Achievement focused and Directive” subscale, three of the mothers were above the desired level whereas two of them were below. On the other hand, posttest results revealed that four of the mothers reached desired level and two had scores which were close to desired level.

Table 2 Wilcoxon Signed Ranks Test results of MBRS-TV “Sensitive/Responsiveness” Subscale

Pre Test-Post Test	n	Mean Rank	Sum of Ranks	z	p
Negative Ranks	0	,00	0	-2,032*	,042
Positive Ranks	5	3,00	15		
Ties					

*Based on negative ranks, ($z=2,032$, $p < .05$).

Table 3 Wilcoxon Signed Ranks Test results of MBRS-TV “Being Affective Expressive” subscale

Pre Test-Post Test	n	Mean Rank	Sum of Ranks	z	p
Negative Ranks	0	,00	0	2,023*	,043
Positive Ranks	5	3,00	15,00		
Ties					

* Based on negative ranks, ($z=2,023$, $p < .05$)

Table 4 Wilcoxon Signed Ranks Test results of MBRS-TV “Being Achievement-Focused and Directive” subscale

Pre Test-Post Test	n	Mean Rank	Sum of Ranks	z	p
Negative Ranks	2	4,00	8,00	-,137*	,891
Positive Ranks	3	2,33	7,00		
Ties					

* Based on positive ranks, ($z=137$, $p > .05$).

Table 5 Mother Participants’ Pre and Posttest Raw Scores of MBRS-TV Scale

MBRS-TV	Mother 1		Mother 2		Mother 3		Mother 4		Mother 5	
SENSITIVITY/ RESPONSIVENESS	PrT	PsT	PrT	PsT	PrT	PsT	PrT	PsT	PrT	PsT
Sensitivity	3	4	1	5	2	5	3	5	2	4
Responsivity	1	4	1	5	2	5	3	5	3	4
Effectiveness	2	3	1	4	2	4	2	4	3	4
Inventiveness	1	4	2	4	1	5	2	4	2	4
Scale Score	1,75	3,75	1,25	4,5	1,75	4,75	2,5	4,5	2,5	4

AFFECT	PrT	PsT	PrT	PsT	PrT	PsT	PrT	PsT	PrT	PsT
Acceptance	3	5	2	5	3	5	3	5	3	5
Enjoyment	3	5	2	5	3	5	3	5	4	5
Praise	3	4	1	5	3	5	3	5	4	5
Warmth	2	4	1	5	2	5	2	4	3	5
Expressiveness	3	4	2	4	3	5	2	4	4	5
Scale Score	2,8	4,4	1,6	4,8	2,8	5	2,6	4,6	3,6	5
ACHIEVEMENT ORIENTATION/ DIRECTIVENESS	PrT	PsT	PrT	PsT	PrT	PsT	PrT	PsT	PrT	PsT
Achievement	2	3	5	3	2	3	2	3	4	3
Directiveness	2	3	5	3	4	3	2	3	4	3
Pace	2	3	4	3	2	4	2	3	4	3
Sacel Score	2	3	4,66	3	2,66	3,33	2	3	4	3

MBRS-TV: Maternal Behavior Rating Scale-Turkish Version, PrT: Pre Test ; PsT: Post Test

Quantitative Results Related to Interactive Behaviors of Children

Findings related to the analysis of pretest and posttest results of CBRS-TV subscales, “Attention” and “Initiation”, and overall scale mean scores of CBRS-TV are shown in Table 6, Table 7 and Table 8.

Table 6 Wilcoxon Signed Ranks Test results of CBRS-TV “Attention” subscale

Pre Test-Post Test	n	Mean Rank	Sum of Ranks	z	p
Negative Ranks	0	,00	0	2,032*	,042
Positive Ranks	5	3,00	15,00		
Ties					

* Based on negative ranks, (z=2,032, p < .05).

Table 7 Wilcoxon Signed Ranks Test results of CBRS-TV “Initiation” subscale

Pre Test-Post Test	n	Mean Rank	Sum of Ranks	z	p
Negative Ranks	0	00	0	2,060*	,039
Positive Ranks	5	3,00	15,00		
Ties					

* Based on negative ranks, (z=2,060, p < .05).

Table 8 Wilcoxon Signed Ranks Test results of Total CBRS-TV scores

PreTest-Post Test	n	Mean Rank	Sum of Ranks	z	p
Negative Ranks	0	00	00	2,023*	,043
Positive Ranks	5	3,00	15,00		
Ties					

* Based on negative ranks, (z=2,023, p < .05).

Wilcoxon Signed Ranks Test results revealed that there was significant difference between pretest and posttest scores of “Attention” and “Initiation” subscales and overall score of the scale. Large effect sizes (Cohen’s d=0,9) were found for subscales and over score of the scale.

As to Pretest and Posttest raw scores of CBRS-TV subscales and items in each subscale (Table 9), the results revealed that there was a desired increase in Attention and Initiation behaviors and overall mean scores.

Table 9 Child Participants' Pre and Posttest Raw Scores of CBRS-TV

CBRS-TV	Child 1		Child 2		Child 3		Child 4		Child 5	
ATTENTION	PrT	PsT	PrT	PsT	PrT	PsT	PrT	PsT	PrT	PsT
Attention	2	5	3	5	3	5	2	4	4	5
Persistence	2	4	3	5	2	4	1	4	3	5
Interest	2	4	3	5	2	4	1	4	4	5
Cooperation	2	4	3	5	2	4	1	3	4	5
Scale Score	2	4,25	3	5	2,25	4,25	1,25	3,75	3,75	5
INITIATION										
Initiation	1	5	4	5	3	4	2	4	2	5
Joint Attention	2	4	2	5	2	5	2	4	3	5
Affect	2	4	4	5	3	5	2	4	4	5
Scale Score	1,66	4,33	3,33	5	2,66	4,66	2	4	3	5
Total Scale Scores	1,85	4,28	3,14	5	2,42	4,42	1,57	3,85	3,42	5

CBRS-TV: Child Behavior Rating Scale-Turkish Version, PrT: Pre Test ; PsT: Post Test

Qualitative Results Related to Interaction Behaviors of Mothers

We summarized common result for all mother interaction behaviors gathered from interviews, video analysis, field notes and diaries according to MBRS-TV. The common mother interaction behaviors were determined as “*Being Achievement-Focused and Directive*” before the intervention. By the intervention, mothers’ interaction behaviors turned to less achievement-focused and directive. They started to act more *Sensitive-Responsive* and *Affective Expressive*.

In general, mothers stated about their interaction behaviors during interviews that they had all been constantly trying to teach something to their children; they had been director in the interaction; however, as a result of the implementation, they left being teacher and tried to set joyful communication with their children and started to follow games and interests of their children during their interactions. Some examples of mothers’ expressions as below:

“Before I had homework from my kid’s school to do at home as matching skills but I couldn’t do them cause of didn’t know how I did. After intervention, I knew that it was important to play with my kid instead of trying to teach something” (Mother 1).

“Before the intervention I was very insistent to my son to play how he wanted but know I was sensitive my son’s plays” (Mother 3).

Data gathered from video analysis results of first probe session, field notes and diaries of implementer showed that at the beginning of the implementation:

- The mothers did not pay attention to be at the same height with the child and to set eye contact with their children during their interactions;
- Instead of following the interests of their children to toys, they tried to direct their children in accordance with their own preferences;
- They tried to have children play with toys obeying some rules instead of playing as they wanted;
- They tried to interact with their children through constant questions and instructions; they either did not notice the sounds of their children and stayed nonreactive or did not value them;

- Instead of smiling and using verbal reinforcers they displayed more authoritative behaviors;
- Instead of being lively and friendly and playmates for their children, they tried to be their teachers;
- Instead of continuing repetitive games, they tried to do new activities with their children every time.

Results gathered from video analysis showed that there was positive progress in behaviors of mothers after transferring required strategies. Field notes and diaries of implementer also revealed that transferred the required strategies:

- Mothers started to be careful in terms of being at the same height with their children during interaction; prefer the games their children preferred to play, and in the way the child wanted; they continued the games their children wanted to repeat; they started to react the utterances of their children; and they left interacting through asking questions.

These results on interaction behaviors of mothers are similar with quantitative results of mothers' interaction behaviors obtained by MBRS-TV.

Qualitative Findings Related to Interactive Behaviors of Children

We summarized common result for all children interaction behaviors gathered from interviews, video analysis, field notes and diaries according to CBRS-TV. During the interviews, regarding the interaction behaviors of their children, mothers stated that their children preferred to play alone before; even if they interacted with them, it would not last long; however, the children passed longer time interacting and playing with them, and they were very happy during these plays and obeyed the rules after the implementation. One example of mothers' expressions as below:

"My daughter always preferred to stay alone and just sit and rocking her body on sofa and but now she was happy to play with me" (Mother 1). Additionally, Mother 2 and Mother 3 also indicated that their children usually started to play with them for a very short time and left the mothers alone because of their directive behaviors before the intervention but now they can play longer time before, after they started acting as a play friend.

Data gathered from video analyses, field notes and diaries regarding interaction behaviors of child participants showed that at the beginning: *"Children were together with their mothers in short periods during their interaction and they preferred to play alone or ignored the suggestions of their mothers during the interactions. With the help of the implementation, they started to stay with their mothers longer; instead of playing alone, they managed to build joint attention; they obeyed the instructions of their mothers during the interaction and appeared to be happy with the interaction with their smiles"*. These results on interaction behaviors of children are similar with quantitative results of children's interaction behaviors obtained by CBRS-TV.

Qualitative Results Related to the Relationship between Interaction Behaviors of Mothers and Children

Studies states that there is positive relationship between mothers and children interaction behaviors and behaviors styles of caregivers affect children's behaviors (Kim, Mahoney and Perales, 2003; Mahoney etc., 1998; 2005). Thus we wanted to see via interviews, field notes, diaries and video analyses is there any relationship. Mothers stated during the interviews that after they had started following the interests of their children and playing with the their preferred toys with their way, and getting rid of asking questions and giving directions their children started to spend more time on the

same activity and with them instead of playing alone. For example, Mother 2 stated that, *“Before I was always asking something to my kids during the interaction as a teacher and my son left me alone after a while. But I indicated that after I stopped my questions, my kid started to play longer than before and looked more enjoyable”*.

Examining the relationship between interaction strategies used by mothers and interaction behaviors of their children, the results of both video analyses and field notes and diaries showed that after mothers had started following the interests of their children and playing the games they preferred, and leaving asking questions, their children started to play with them longer and did not prefer playing alone and becoming isolated; they obeyed more to the instructions of their mothers; and became more happy and cheerful. Furthermore, the implementer mentioned about a similar situation between herself and children in the field notes and diaries. She stated that child participants started to meet her at the doorstep after a while and they started games on their own. Implementer explained this situation with her being in interaction with children and using RT strategies during those interactions.

Qualitative Results Related to Developmental Behaviors of Children

Data gathered from interview, video analyses, field notes and diaries were examined under the themes of *game quality, imitation, obeying directions, fine motor skills and naming*. Game quality included game, all sound imitations they displayed during the interaction with their mothers, movement imitations, and imitation behaviors with objects. The behavior of obeying directions was defined as children's fulfilment of demands and desires of their mothers. Video analyses, field notes and diaries showed that all participants displayed a positive progress particularly in terms of these five behavioral areas. Moreover, a student was recorded to have progress in fine motor skills by pushing buttons of some toys, and another participant started to name some objects and colors with similar sounds.

As for developmental behaviors of children, three mothers stated that their children recorded progress in imitation behaviors; four stated that their children improved their naming behaviors; three stated that their children displayed improvement in obeying directions; and two mothers stated that their children showed positive developments related to behavioral problems. For example, Mother 1 and Mother 2 indicated that *“their children started trying to imitate what mothers said verbally”*. Also, Mother 3 reported that *“her son had hit his head before during the play time. Because mom was trying him to do what mom wanted but now he was different and didn't display that behavior”*.

Results Related to Most Frequently Used RT Strategies by Mothers

As a result of the interviews carried out with mothers, it was understood that the most frequently used strategies by mothers were the same ones. Examining the answers of mothers to this question, all participants stated that *“they respectively played especially with the toys of their children the same as they played; they used to try to teach something to their children but they preferred to communicate with their children for joy after the implementation”*. Moreover, five mothers stated that *“they followed the leadership of their children and became their playfellows rather than teachers”*. Five mothers stated that *“they were more careful about being at the same height with their children and being face to face with their children”*, and five mothers state that *“they gave up asking constant questions to their children”*. Some example of mothers' expressions as below:

- “I didn't think before that it is so important to make eye contact but now I know the importance and also it is so easy to do that” (Mother 1).
- “I always asked questions before but I don't do that now and it is really important and easy” (Mother 2).

- “Before I thought that I should ignore my son’s meaningless vocalization but now I always respond to him as talking functional and it is so easy. I can do that every time even so when I am engaged in with house works” (Mother 5).

Results gathered from video analyses indicated that mothers started using most “get into my child’s world”, “following the leadership of the child” “play with my child with toys”, “following the focus of interest of the child”, “communicate without asking questions”, “responding to sounds and diversifying them”, “responding to the child’s unintentional sounds, mimes and gestures as if they are pieces of a meaningful chat or deliberate communication”, “value that my child is doing”, “being lively”, and “repeat activities my child enjoys” strategies after being taught about these strategies.

Data gathered from field notes and diaries of the implementer revealed that although the implementer taught new strategies according to RT program guide, the most frequently transferred and preferred strategies by mothers were similar to the ones gathered from the data of video analyses. Moreover, it was understood that implementer considered those strategies as the milestones of the program and stated that they had positive contributions to the interactive and developmental behaviors of participants.

RT Strategies the Mothers had Difficulty in Using

Some strategies were found difficult to use for mothers. During the interviews with mothers, four of them stated that for the strategy: **expand the show my child next developmental step** and the strategy: **expand to clarify my child’s intention or develop my child’s topic**, “*it was important to know in which developmental period their children were but they occasionally had problems in behaving appropriate to this and they would need the support of an expert for the following step*”. For example, Mother 2 stated that

“She usually compared his son with his peers based on calendar age and thinking that he should do same behaviours and she noticed she needed support especially about how she should manage her expectations for her son”.

Three participant mothers stated that “they were aware of the benefits and importance of playing games with their children; however, they had problems in creating regular game times as in implementation sessions since they could not have spare time due to household chores”. Mother 1 told that “she knew the importance of playing regularly but she also confessed she couldn’t do every time because of other things which she had to do”.

In addition to the explanations of mothers, the implementer stated in her diaries that especially mothers who had severe autistic children needed long-lasting guidance in terms of using strategies against their children, and in order the program to be effective, mothers were recommended to accept and implement these strategies as parts of their lives.

Data gathered from field notes and diaries of the implementer showed that mothers particularly had difficulty in using strategies that required understanding and evaluating the developmental level of their children”, and strategies that required them to behave in accordance with the developmental level of their children to move up to another step, and they stated that they needed support of an expert on these issues. They listed the most difficult strategies as “*helping child to pass to next developmental step*”; “*carrying child’s developmental goals and the things he can do to an upper level*”; and “*waiting for a further level silently*”.

Results Related to the Effect of RT on Other Family Members

The intervention sessions conducted with mothers and children but also for three participants, older sisters or brothers attended some sessions. On the other hand, after sessions it was possible to tell

what they are doing during the intervention to other family members for mothers. Three mothers stated that they informed and guided their husbands, other children and other people, and affected interaction types of them positively. What's more, it was learned during the study that the written notes that were left during the implementation were read together with fathers. For example, in the interview Mother 1 stated that *"her husband read the notes in the evenings which the implementer gave the mother and tried to use the strategies especially about imitation of the words or sounds"*. Also, Mother 4 stated that *"before she couldn't have any idea what she should do for his son most of time but now she told that she could give recommendation to her husband and older daughter"*. She said that *"My husband always said "be quiet" to my son when he displays meaningless sounds or vocalization before. But now I can warn him to act different and he is trying to do what I told"*. Additionally, especially two mothers stated that *"siblings of their participant children wanted to join implementation sessions voluntarily and tried to implement the strategies they learned against their siblings"*. For example, Mother 2 indicated that *"her older daughter didn't play much more with his younger brother and mom always was trying to persuade her to play with her brother. But by the intervention started, mother said that "you see, she is very keen than me about what you are telling us and trying to use the strategies after you left"*. Thus, the program contributed to the behaviours of siblings against their participant siblings. One of the themes that were obtained from field notes, diaries and interviews was the indirect effect of the program on mothers and other family members although it was not aimed at the beginning of the study. It was stated in the diaries of the implementer that siblings of three participants joined the implementation sessions and tried to display appropriate behaviours in accordance with the related strategies.

DISCUSSION

The first research question of the study was to investigate the effect of RT on parent-child interaction behaviors of five mothers who had children diagnosed with ASD. Results of the analyses revealed that mothers had significant differences at "Being Sensitive-Responsive" and "Being Affective Expressive" subscales; however, "Being Achievement focused and Directive" subscale did not reveal any significant difference. On the other hand, examining pretest scores of mothers for this subscale individually, it was seen that three mothers got scores between 4 and 5 from this subscale which indicated that they behaved extremely success oriented and directive. The notes taken by the implementer in her diaries indicated that it was a common characteristics of mother participants to be teaching oriented and directive. Similarly, all mothers stated during semi-structured interviews that they were too much instruction oriented and they were all in efforts of teaching something to their children during their interactions. Considering as a whole, MBRS-TV pretest results showed that mothers were less responsive and sensitive against their children whereas the data gathered from diaries and interviews revealed that all mothers were success oriented and directive. Mahoney and Perales (2003), stated that these two behavior types were in inverse proportion; the more the mothers were success oriented and directive, the less sensitive and responsive they were; conversely, as they became more sensitive and responsive, they became less success oriented and directive. Deriving from this information and reinterpreting the results gathered in this study, it would be seen that all mothers had low scores for being sensitive and responsive, and being affective expressive behaviours. Thus, the mothers who were less sensitive and responsive against their children were likely to be success oriented and directive at a high level. Difference between pretest and posttest scores of being success-oriented and directive were not significant, and three mothers were found to be success oriented and directive at a high level prior to the implementation. As for the other two mothers, they were below the desired level. For this reason, mean scores of five mothers were close to mid-point, and three mothers had decreasing and three increasing terminal behaviours which caused mean scores become close to mid-point. Examining the data gathered from MBRS-TV, video analyses, field notes and interviews as a whole, it would be seen that they had consistencies among each other. Thus, considering all the findings of the study, it can be said that all mothers became more sensitive and responsive against their children; more sensitive and expressive, and success oriented and directive at an ideal level. These results show resemblance with previous studies on RT in terms of the fact that RT had positive effects on interactive behaviours of mothers who have children diagnosed with ASD in Turkey (Karaaslan; Diken and Mahoney, 2013; Karaaslan and Mahoney, 2013; Mahoney and Perales, 2003).

Second question of the study aimed to find out whether RT had an effect on interaction behaviors of child participants. The findings gathered from pretest and posttest analyses with regards to this aim revealed that there were significant differences in Attention and Initiation subscales and overall mean scores. In addition, common findings related to all children from video analyses showed that children had positive changes in participation, persistence, attention, joint attention, cooperation, initiation and interactive behaviours. Analyses of field notes and observation notes taken by the implementer about children showed that all participant children had positive changes in terms of the items of Attention and Initiation subscales. It was understood from the diaries of the implementer that she had taken notes about cooperative behaviours of two children; and initiative behaviours of two other children. Furthermore, all of the mother participants stated during the interviews that their children had positive changes and improvements in their participatory behaviours, and they stated that they observed their children displaying initiative and cooperative behaviours. All mothers stated that their children were playing to enjoy with their toys, and they had preferred to play alone in the past but after the implementation they were playing together and for long periods. What's more, the children wanted to start a game on their own. Examining the findings gathered from CBRS-TV, video analyses, field notes, diaries and interviews as a whole, it would be seen that they had consistency among each other and had similar results. Thus, within the light of all these findings, it is possible to state that all children had positive changes and improvements in Attention and Initiation behaviours after the implementation. These results show resemblance with previous studies on RT in terms of the fact that RT had positive effects on interactive behaviours of children diagnosed with ASD (Karaaslan, Diken and Mahoney, 2013; Karaaslan and Mahoney, 2013; Mahoney and Perales, 2003).

For the other research questions we just used qualitative data collection tools and third question of the study aimed to find out whether there was a relationship between interactive behaviours of mothers and their children. Similar studies conducted by Kim and Mahoney (2005), Mahoney and Perales (2005) and Mahoney and Perales (2003) showed that there was a relationship between the progress in the interactive behaviours of children and the progress observed in mothers in the same framework. In other words, there was a positive relationship between increase in mothers' being sensitive and responsive, and affective-expressive behaviours and increase in children's attention and initiation behaviours. Hence, the findings of both mothers and children from MBRS-TV and CBRS-TV pretest scores showed that desired behavior types were at lower levels; however, posttest scores displayed a considerably mutual increase. Similarly, findings related to probe sessions showed that mothers starting using strategies contributed to increase in participatory behaviours of children simultaneously. Accordingly, the results of previous studies and findings of the present study showed that there was a relationship between behaviours of mothers and of children. Studying on all common findings related to all participants from field notes it could be seen that mothers had expressions stating that they gave up being achievement oriented and directive; instead, they preferred to be more sensitive and responsive. Similarly, there were implementer observation notes stating that children displayed attention, persistence, cooperation, joint attention and participation behaviours under the title of attention and initiation basic behaviours. It would not be a coincidence for children to display participatory behaviours after the increase in the behaviours of their mothers, and this was thought to be related to the behaviours of mothers. Even the implementer stated in field notes that as the sessions progressed the children started to meet her at the doorstep smiling, and waited for the implementer to take the things in her bag out. The implementer stated the reason for this in her diaries as her using RT strategies as well during the sessions. Considering video analyses, field notes, diaries and interviews as a whole, it could be seen that there was consistency in terms of the relationship between the findings related to the behaviours of both mothers and of their children, and there was a relationship between the behaviors of mothers and their children as it had been stated by Kim and Mahoney (2005), and Mahoney and Perales (2003; 2005).

Studies that focused on effect of RT on developmental behaviours of children, it was stated that children had progress and improvements in terms of cognitive, communicative and socioemotional developmental areas (Karaaslan and Mahoney, 2013; Karaaslan, Diken and Mahoney, 2013; Kim and Mahoney, 2005; Mahoney and Perales, 2005). Qualitative data collection tools were used to find out whether behaviours of mothers had an impact on developmental behaviours of their

children in this study. Overall joint results gathered from video analysis, field notes, and diaries showed that children had improvements especially in imitation, obeying directions (cooperation), naming, game quality and fine motor skills. Mothers gave similar responses to these subjects in interviews. Studying on video analysis, field notes, diaries and interviews, the results of the study had consistency among each other, and all of them indicated improvements in developmental areas even if some of them were limited. These improvements were higher especially in following directions and imitation behaviours. Although these developmental progresses were small scale progresses, previous studies showed that RT was effective with children who were younger than three years, and the studies focusing on the effect of RT on older children at preschool period are still limited (Karaaslan, Diken and Mahoney, 2011; Mahoney and Perales, 2003; 2005). In addition, it was stated in previous studies that no matter which method was tried, its effect would be limited on children with severe disabilities. For this reason, even if they were not at desired level, those small scale developmental progresses were considered significant in this study (Karaaslan, Diken and Mahoney, 2011).

Video analyses, field notes, diaries and interviews related to the most frequently used strategies by mothers, it was found out that these strategies were (1) entering the child's world, (2) following the leadership of child, (3) playing with the toys the child played, (4) following child's focus of interest, (5) setting communication without asking questions, (6) responding the sounds and diversifying them, (7) responding to the child's unintentional sounds, mimics and gestures as if they are parts of a meaningful chat or communication, (8) valuing the things the child does, (9) being lively, and (10) continuing a repetitive game. Deriving from all those findings, it can be concluded that all abovementioned strategies helped mothers become more sensitive and responsive towards their children, and behave more sensitively and responsively against them. They have an important role in RT as well. Young Kong and Carta (2011) who examined the studies that focused on responsive interaction strategies in literature tried to find out which strategies were defined the most in 26 studies they reviewed. They found out that the most frequently defined strategies which were defined in 24 of these studies were the ones that aimed to increase communicative responsiveness including imitating the expressions of children, expanding the expressions of children, taking turns, providing language input, giving opportunity to child to react, and reacting to child's behaviours. Second the most frequently used strategy in the same study was found to be following the leadership of the child and being affectively responsive to the behaviours of the child. Strategies that were used in this study were similar to the ones that were reported to be used frequently in RT. In addition, the implementer of the study stated that these strategies had direct effects on interactive and developmental behaviours of children and they formed the milestones of RT as her opinion on these strategies.

In addition to the findings gathered in the study, the study had some limitations as well. First, the study was limited to five children diagnosed with ASD and their mothers. However, although the implementer planned to include more participants in the study, she couldn't manage this because of either not finding candidates that met her preconditions or some mother's renouncing participating in the study after they had learned that the implementation would be carried in their houses. Similarly, it was stated by Wayner, Spiker, Linn and Genlach-Downie (2003) that it was difficult to find participants for such researches or programs as most people were not volunteer for such studies. Thus, this was a case that had been experienced in studies conducted in other countries as well. Second limitation of the study which was conducted with five mother-child dyads was the study's being designed as single group pretest-posttest model. Since it is not possible to create a control group and compare with it, such studies are considered as weak experimental studies (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz and Demirel, 2008). However, regarding the studies conducted with children with special needs, it has usually been difficult to plan group experimental studies and form groups equivalent to each other. For this reason, the number of group experimental studies is considerably limited in special education. In order to decrease the effect of this limitation to minimum levels in the study, mixed research design was used, and in addition to quantitative data collection tools, qualitative data collection tools were used to provide additional justifications for the data that was collected. Moreover, it was considered unethical to keep children from control group waiting without doing anything at early childhood period which is an important part of development. Furthermore, examining 8 previous studies that were conducted on RT, it was seen that only three of

them were designed as pretest-posttest model with control group (Karaaslan, Diken and Mahoney, 2013; Karaaslan and Mahoney, 2013; Kim and Mahoney, 2005). In addition to deal with this limitation, internal validity of the study was established such as; (1) a short implementation (10 weeks) was carried out to take care of maturation, (2) not receiving a relationship-based intervention such as the RT program was prerequisite for mothers.

Another limitation of the study was not being able to collect data related to developmental behaviours of child participants through a standardized scale. Child participants were evaluated through GECET to compare their calendar ages and developmental levels at the beginning of this study. However, a developmental evaluation scale was unable to be used to find out whether the children displayed any advance in terms of development or not at the end of the study; instead, this was tried to understand through qualitative data collection tools. Implementer listed the reasons for this as (1) developmental evaluation scales such as GECET are not suitable for children with special needs or children effected by a disorder as stated in its manual. they are used to find out whether there is a problem with the children who display normal development or are at risk in terms of development. In other words, they are scanning tests for identification, and are not suggested for advanced evaluations of children affected by a disorder. (Temel, et.al., 2005; Yalaz, Anlar and Bayoğlu, 2011), (2) calendar ages of the children participated in this study were between 34 and 67 months. GECET requires the evaluation of children once in every six months after the age of 24 months (Temel et.al., 2005). However, implementation sessions of this study were completed in 10 weeks, which was approximately three months. Thus, even if the participant children revealed advances in some developmental areas, they were considered to be unable to meet the requirements projected by this evaluation tool in three months. (3) It was stated in the studies focusing on the characteristics of some standard tests that are used in early childhood special education that such tests had some limitations. Especially the content of the standard tests that evaluated development was different from the materials that were used in the curriculum of the related special education program. For this reason, these tests were considered unable to provide insights and realistic information in terms of measuring program goals, and development and level of children, (Ergül, 2009). Due to all these stated reasons, video analyses, field notes, diaries and interviews were used to find out and evaluate whether there were any changes in developmental behaviours of children after the implementation that lasted three months.

Despite all these limitations the study is thought to have significant contributions to the field. Once, it is the only study conducted as a mixed design with both quantitative and qualitative data to find out the most frequently used strategies and effectiveness of RT. In addition, the data gathered from the study include various suggestions for further research. It is primarily suggested that in order to support scientific justification of RT, similar studies should be conducted either with children with ASD or other disabilities and their parents either on a home-centric or institution-centric based implementation. It is possible to observe the effects of an implementation on a group through qualitative data collection techniques as well. Moreover, regarding the studies conducted at natural environments such as homes, implementer is forced to take spontaneous decisions. For this reason, designing such an implementation as an action research would provide better understanding about the process of such programs and participants. Moreover, it would help writing the processes in detail and reach various results in the field, and suggested for further research. In addition, detailed and daily interviews including daily questions related to each strategy with families are suggested for further studies since they would provide the opinions of families about these strategies. RT is a program that should be implemented at least for six months. Implementer of the study stated that in order the program to be effective for parents and their children in terms of their interactions and developments, existing strategies should be turned into their life styles, and especially the individuals with severe disabilities should be supported for a longer period. Deriving from this information, getting into contact with families after a while after the completion of the implementation and asking their opinions on the place of these strategies in their lives is recommended to find out long term effects of RT and collect monitoring data for further research. Some mother participants stated that siblings of their children were indirectly affected from the program. The implementer indicated that fathers were usually not at home as they were working, and mothers were at home dealing with both household

chores and childcare. Usually, while the mother was dealing with housework, elder siblings were taking care of their small siblings. For this reason, having siblings gained interactive behaviours is considered to be positive for children with ASD. Thus, the studies focusing on interactive behaviours of siblings of individuals with ASD or other diagnosis groups, and teaching RT strategies to these siblings and investigating their effectiveness are suggested for further research.

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A Research on Visual Learning Representations of Primary and Secondary Science Textbooks in Turkey

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Abstract

The aim of this study is to analyze the types of visual representations in primary and secondary science textbooks in Turkey. The sample of the research constitutes six textbooks prepared by private publishers for primary and secondary science courses (3rd-8th Grade) in Turkey in 2018-2019 academic year. Document analysis design, which is one of the qualitative research methods, is used in this study. The data are analyzed with descriptive analysis method by using the Moline (1995) “*Visual Representation Classification Model*”. The results of the study show that simple diagrams are used more frequently than other types of visual representations in all class levels and units in science textbooks. It is understood that synthetic diagrams are more preferable in the 6th, 7th and 8th grades’ science textbooks than in other grade levels, whereas analytical diagrams are more preferable in the sixth grade’s science textbooks than the other grade levels. Visuals such as graphics and maps are determined to be little used in all class levels and units, on the other hand table visuals are frequently used in all class levels. In addition, it is determined that the timeline as the visual representation is used in a few units only in the 7th grade’s book. The results of this study show that visual learning representations in primary and secondary school textbooks need to be rearranged in terms of diversity and distribution in class level and units.

Keywords: Visual learning representations, Science textbooks, Document analysis

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INTRODUCTION

Textbooks are one of the most basic means in order to store and transmit information (Lee, 2010) and they are the most basic guides to understand specific subjects arranged for students (Khine & Liu, 2017; Morgil & Yılmaz, 1999). According to Kulm, Roseman & Treisman (1999), textbooks not only state the purpose and plan the lesson by presenting, organizing and making learning more appealing to the students, but they also play a major role to help classroom activities. Stern and Roseman (2004) determines that textbooks are the most important resources on which many teachers rely especially when they experience non-area teaching. However, a study by Chiappetta et al. (2006) shows that teachers use textbooks at a rate of 90% while setting students homework.

Depending on the breadth and depth of the field, the importance of books stands out much more in and out of class. Within this framework, science textbooks are taught from 3rd to 8th grades and their effects are felt more on the students. As science grows in a complex way, students face increasing difficulties in understanding and interpreting scientific knowledge (Lee & Jones, 2017). Students are required to be supported with more effective science materials and resources (Duschl vd. 2007). Science textbooks are used as the most basic sources for students to teach science subjects in and out of the classroom and so they have still great importance in courses (Nakiboğlu, 2009).

According to Binns and Bell (2015), science textbooks provide a detailed explanation on the specific content of the course. The content and formal quality of science textbooks have a significant impact on learning and teaching science (Khine, 2013). Schizas, Papatheodorou and Stamou (2018) point out that science textbooks are sources that creatively refine scientific knowledge according to the age of learners and educational criteria. However, science textbook's authors are required to present information effectively and accurately. Nowadays, science textbooks need to be supported with various visual elements that will make easier for students to understand the content of subject together with scientific texts. Visual representations in science textbooks are quite important in terms of giving correct message associated with text to students. Images are powerful learning tools (Carney & Levin, 2002; Guo, Wright & McTigue, 2018). Many researchers point out that the integration of visual learning representations (pictures, diagrams, drawings, tables, graphs, maps, models, etc.) into a science unit greatly facilitates students' understanding the scientific content they study (Cheng & Gilbert, 2014; Cox, 2005; Danish & Enyedy, 2007; Lee, 2010; Lemoni et al., 2013; Preston, 2016; Wilson & Bradbury, 2016; Gou, Zhang, McTigue, & Wright, 2017). According to the New Generation Science Standards (NGSS, 2013), in addition to writing in science, students' interaction with visual learning representations such as drawings, models, diagrams, graphs and tables is critical to provide students with more effective scientific understanding. (NGSS Lead States, 2013). The quantity and quality of the visuals in the textbooks are sufficient to help students understand the issues more effectively and develop their visual literacy skills (Uçar & Somuncuoğlu Özerbaş, 2017). Correctly supporting textbooks with visual learning representations are essential elements in order to understand scientific texts effectively. Visual representations take place in many different forms in science textbooks as classroom activities, laboratory activities and assessment tools (Shehab & Bou Jaoude, 2017). Visual representations play an important role especially to simplify scientific content in science for students (Tippett, 2016). Coleman, McTigue and Smolkin (2011) state that the use of visual representations for learning has a strong effect on explaining and exemplifying new and abstract concepts in science. Visuals are useful means to help make concepts, processes, and ideas more understandable (Kress & van Leeuwen, 1996). If it is not possible to observe and try the concepts or processes, it is important to make these situations understandable through visual representations in a course (Cook, 2006; Preston, 2017; Rapp, 2005).

In the relevant literature, it is understood that visual representations have a dual classification as figurative and non-figurative representations (Petersson, 2002). Figurative representations include visual learning representations like pictures, diagrams, graphs, photographs, paintings, concept maps, diagrams, tables and various symbols (Doblin, 1980; Moline, 1995; Petterson, 2002; Vekeri, 2002; Coleman, McTigue & Smolkin, 2011). On the other hand, non-figurative visual representations are labels, letters, and verbal descriptions (Petersson, 2002). In addition, Vekiri (2002) summarizes four

common types of visuals. These are diagrams, graphs, maps and tables. Again Roberts et al. (2013) classified eight forms of visual representations. These are graphs with subtitles, diagrams, graphs, flowchart, addendum, maps, tables and time series.

Considering relevant literature, it is understood that the researchers examine the science textbooks in many respects (Calık & Kaya, 2012; Irving, Savasci-Acikalin & Wang, 2006; Sen & Nakiboğlu, 2012; Tekbıyık, 2006). Moreover it is observed that investigations in the context of special contents like the nature of science and socio-scientific issues have been focused in recent years (Abd-El-Khalick et al., 2017; Niaz, Klassen, McMillan, & Metz 2010; Orgill, 2013). However, it is understood that in recent years important studies on visual learning representations in textbooks have been carried out by researchers (Akçay & Akçay, 2018; Gkitzia, Salta & Tzougraki, 2011; Kapıcı & Savaşçı-Açıklan, 2015; Liu & Khine, 2016; Pozzer & Roth, 2003; Rybarczyk, 2011). In particular, Coleman and Dantzler (2016) examined the types and frequency of visual representations in science books prepared for children in America between 1972 and 2007. The results of this study show that the number and variety of images have been increasing significantly in books.

Science textbooks should support meaningful learning for students to be an effective educational appliance. Given that a great amount of knowledge in the field of science is abstract, complex and difficult, textbooks need to be supported with visuals that facilitate understanding and remembering this knowledge. Based on this, it is quite important to detect whether there are visual learning styles in primary and secondary school science textbooks in Turkey and to what extent they include them. Because it is thought that it will make significant contributions to the authors in the preparation of more effective science textbooks in the coming years. Therefore, the main aim of this study is to analyze the situation of the textbooks prepared within the framework of science education program in Turkey in terms of visual learning representation. While there are a limited number of studies examining science textbooks in Turkey in terms of visual learning representations, the fact that there is no study examining textbooks at all grade levels of primary and secondary schools in terms of visual learning representations makes this study more important. In this context, answers to the following questions were sought.

1. What kind of visual learning representations are included in science textbooks?
2. How are the visual learning representations distributed in accordance with units?
3. What are the differences and similarities in the distribution of visual learning representations in science textbooks on the basis of grades?

METHOD

This study involves document analysis that is the one of the qualitative research designs in which the visual learning representations in primary and secondary school science textbooks in Turkey are examined. Analyzing of written and visual documents in qualitative research is quite important in terms of providing rich and comprehensive conclusions (Bas & Akturan, 2008). The document review includes analysis of written materials containing information about the cases to be investigated. (Simsek & Yildirim, 2013). In this context, official publications, reports and records are at the center of document analysis. (Patton, 2002). According to Bowen (2009), document analysis is a very advantageous method in terms of allowing detailed investigations about the research subject. The documents in the study were examined according to the descriptive analysis systematics. While descriptive analysis is used in the processing of data that do not require in-depth analysis, the data obtained are summarized under predetermined headings and presented in a format that the reader can understand after being interpreted (Büyüköztürk, Çakmak, Akgün, Karadeniz and Demirel, 2009). In this respect, science textbooks were analyzed by descriptive analysis according to the criteria of visual learning representations defined previously, and the status of visual learning representations in textbooks of different grade levels was revealed.

Studying Materials

The sample of this study consists of six textbooks (particularly 3rd, 4th, 5th, 6th, 7th and 8th grades) prepared by private publishing houses for science courses at primary and secondary schools in Turkey in the 2018-2019 academic year. The books selected for the study include course materials to be taught in primary and secondary schools whose eligibility period has been recognized as five academic years according to Article 21 in Textbooks and Educational Materials Regulations by approval of Head Council of Education and Morality, Turkish Ministry of National Education. The records of textbooks are presented in Table 1.

Table 1. The records of primary and secondary school textbooks chosen for the sample

Publisher	Grade	Publish Date	Authors
Tutku Publishing	8 th	2018	Ayşe Aytac, Sümeyya Türker, Tuğba Bozkaya, Zühre Üçüncü
Aydın Publishing	7 th	2018	İsmail Gezer
Sevgi Publishing	6 th	2018	Coşkun Çiğdem, Gizem Minoğlu Balçık, Özgün Karaca
Ada Publishing	5 th	2018	İlknur Özkan, Zeynep Mısırlıoğlu
Ata Publishing	4 th	2018	Mustafa Çetin, Gündüz Şatıroğlu, Sinem Yanık
Anadol Publishing	3 rd	2018	Erhan Yiğit

Data Collection Process and Analysis

The primary and secondary school science textbooks chosen as data collection means of the study have been obtained via two teachers who attend science classes at primary and secondary schools in Kars city center. The obtained textbooks are analyzed by considering Moline's (1995) classification systematic on visual learning representations (Table 2). The analysis of the visuals in the textbooks is made on the basis of 7 units at each class level. The distributions of the units in the primary and secondary school science textbooks are shown in Table 3. Upon being analyzed, visual representations prepared for evaluation purposes at the end of the unit and the subjects are not subjected to examine.

Table2. Moline's (1995) Classification Systematic on Visual Representation

Simple Diagrams They are labels or one scale drawings	Illustrated Dictionary It helps the reader to identify, differentiate or explain parts within a set. Measurement Diagram It depicts the subject with a scale to show dimension, mass or distance.
Synthetic (Artificiality to Simulate Nature)Diagrams It is to establish connections between parts or subgroups of a stage within a broad cluster.	Flow diagram It respectively connects the sections (Water Cycle, Life Cycle) to show a process that moves through time. Tree and Network Diagram It shows the subgroups and classifications within the hierarchy to which the concepts or objects are connected and interconnected series or the form of branched tree
Analytical Diagrams It helps us to see the interior of an object or to understand its inner function.	External Cross-Sectional Diagram It helps us to interpret the relations in the three dimensional plane by sectioning from outside a layer or peeling its shell. Internal Cross-Sectional Diagram It is to reveal the interior of an object in a plane by cutting an object in half or taking an end-to-end slice.

Graphics When the information is measured, it is used to present that information.	Bar Chart It is used to organize information such that it is used for sorting, comparing and measuring within units from left to right. Line Chart It is used to indicate changes in size or values.
Maps It is used to place information within a spatial context.	Bird's Eye View Maps It shows the scene from which the image is taken directly from an upward angle. Environmental Maps Drawings of the observations in the immediate surroundings (school, home, etc.) Flow Maps It summarizes a process where mobility is represented on the map (migration and weather)
Tables It represents a structure consisting of rows and columns, mostly without pictorial elements.	
Timeline They are one-dimensional visuals in which information is organized within chronological sequences and the times are marked by subtracting arrows (the development of flying, the development of personal computers since 1970, etc.).	

Table 3. The distribution of the textbooks analyzed by the grade levels and units

Unit	3 rd grade	4 th grade	5 th grade	6 th grade	7 th grade	8 th grade
1	Let's get to know our planet	Earth Crust and the movements of our Planet	The Sun, The Planet and The Moon	Solar System and Eclipses	Solar System and Beyond	Seasons and climate
2	Our Five Senses	Our Nutrients	World of living things	Systems in our body	Cell and Divisions	DNA and Genetic Code
3	Let's get to know Force	Force Effects	Measurement of Force and Friction	Force and Motion	Force and Energy	Pressure
4	Let's get to know Matter	Properties of Matter	Matter and Transformation	Matter and Heat	Pure Substances and Mixtures	Substance and Industry
5	Light and Sounds Around Us	Lighting and Audio Technologies	Propagation of Light	Sound and Features	Interaction of Light with Matter	Simple Machines
6	Journey to the World of Creatures	Human and Environment	Human and Environment	Systems and Health in Our Body	Reproduction, growth and development in living organisms	Energy Transformations and Environmental Science
7	Electric Vehicles	Simple Electrical Circuits	Electrical Circuit Components	Transmission of Electricity	Electric circuits	Electric Charges and Electrical Energy

Reliability of the Study

Firstly, both researchers independently have described the 8th grade's science textbook according to Moline's (1995) visual learning representations template in order to ensure the reliability of the analysis of the documents in the research. Then, the same book has been analyzed by another specialist in science education by using Moline's (1995) template. As a result of the series of analysis conducted by both researchers, considering the contradictory descriptions made by the other expert's analysis, the series of analysis are reviewed and concluded in such a way that no contradictions remain. Coding reliability is calculated by using formula $[\text{Agreement} / (\text{Agreement} + \text{Disagreement})]$ (Miles & Huberman, 1994). In the visual representation analysis conducted by both researchers on the basis of seven units on the 8th grade's textbook, the consistency between the researchers is found to be 92%. After this phase, all the textbooks are coded together by both researchers and the analysis findings are finalized.

RESULTS

In this section, analysis results related to the use of visual learning representations in science textbooks used at primary and secondary school are presented. The findings are shown in Table 4 and onwards. In this table, usage of visual representation in science textbooks prepared firstly for 5th, 4th, and 3rd class levels and then for the 8th, 7th, and 6th class levels is described.

Table 4. Findings Related to the Analysis of Visual Learning Representations Used in 3rd, 4th, and 5th Grades' Science Textbooks

Grade	Unit	Simple Diagrams		Synthetic Diagrams		Analytic Diagrams		Graphs		Maps		Tables	Timeline
		Illustrated Dictionary	Measurement Diagram	Flow Diagram	Tree and Network Diagram	External Cross-Sectional Diagram	Internal Cross-Section diagram	Bar Chart	Line Chart	Bird's Eye View Map	Environmental Map	Flow Map	
5 th Grade	1	13	1	2		1						1	
	2	84		1	2					1		2	
	3	46										4	
	4	52						5				13	
	5	53						1				3	
	6	30				1						1	
	7	37			1							7	
	Total	315	1	3	3	2		1	5	1		31	
4 th Grade	1	44		2	2								
	2	49										1	
	3	66	1		1							1	
	4	77	5	4	4							8	
	5	100			1					4		1	
	6	29											
	7	23											
	Total	388	6	6	8					4		11	
3 rd Grade	1	32				2							1
	2	21											3
	3	45											1
	4	45											4
	5	46			1								4
	6	42		1	2					4			3
	7	53			6								1
	Total	284		1	9	2				4			17

Table 4. (Continued) Findings Related to the Analysis of Visual Learning Representations Used in 6th, 7th, and 8th Grades' Science Textbooks

Grade	Unit	Simple Diagrams		Synthetic Diagrams		Analytic Diagrams		Graphs		Maps		Tables	Timeline
		Illustrated Dictionary	Measurement Diagram	Flow Diagram	Tree and Network Diagram	External Cross-Sectional Diagram	Internal Cross-Sectional diagram	Bar Chart	Line Chart	Bird's Eye View Map	Environmental Map		
8 th Grade	1	19		2						6	2	2	
	2	70		2	9			1				3	
	3	23	6										
	4	106	1	2				4				16	
	5	62											
	6	37		6	5			1		1		2	
	7	71			1								
	Total	388	7	12	15			1	5	7	2	23	
7 th Grade	1	38			2	1	2				1		1
	2	37	1	1	11	3						2	
	3	76	5	1						1		2	
	4	110	1	1	3							9	2
	5	118			4					1		1	
	6	85		8	2								
	7	39						2				1	
	Total	503	7	11	22	4	2	2		2	1	15	2
6 th Grade	1	35	5	2									
	2	118		2	2	7	4					5	
	3	79	1					1	7			7	
	4	102		2				2		1		11	
	5	82			3			1	1			2	
	6	88			5		6					2	
	7	58	1		3							2	
	Total	562	7	6	13	7	10	4	8	1		29	

When Table 4 is examined, it is seen that the number of visual representations about illustrated dictionary under simple diagrams is much higher in all class levels and units than other visual representations. It is determined that the number of illustrated dictionaries in 8th, 7th and 6th grades' science textbooks is higher than other grades'. In addition, it is found that the measurement diagram is used seven times in the upper classes' science textbooks, but it is never used in the third science textbooks.

The use of synthetic diagrams in 6, 7 and 8th grades' science textbooks is preferred more than other grades' and in particular, the number of usages of tree and network diagram as visual representation is found to be higher.

When Table 4 was analyzed in terms of analytic diagrams, it was understood that these diagrams were never used in the eighth and fourth grades but rarely used in the third and fifth grades. In addition, it was found that the internal and external cross-sectional analytical diagrams in the sixth grade textbooks were used more than other grade levels.

When the graphical visual representation is considered, it is seen that it is preferred in the second grade classes (8, 7, 6 and 5), whereas it is not preferred in the first grade (3 and 4) classes.

Furthermore, it is seen that line graph is more preferable than bar graphs in graphical visual representation.

When the map as the visual representation is examined, it is seen that environmental maps are never used in science textbooks and the flow map as visual representation is used twice in the 8th grade's unit called Seasons and Climate and only once in the 7th grade's unit called Solar System and Beyond. In this visual representation, it is seen that bird's eye view visual representation is mostly preferred.

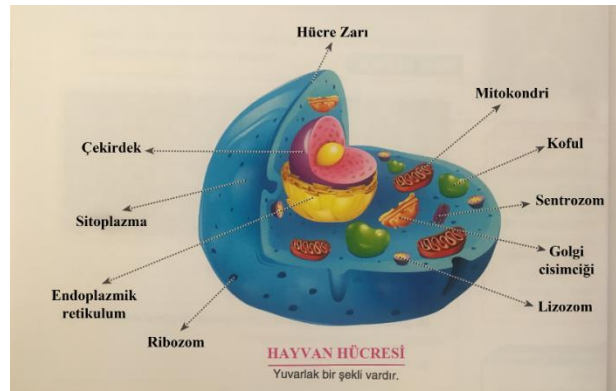
When the table as the visual representation is considered, it is seen that this visual representation is frequently used in science textbooks at all grade levels. It is found that the use of the table as visual representation in the fourth units of all grades (Let's Get to Know the Matter, Properties of Matter, Matter and Change, Matter and Heat, Pure Matter and Mixtures and Matter and Industry) is remarkably higher than other units.

It is found that the timeline as the visual representation is used in the unit titled Solar System and Beyond in the part of the space research and in the unit titled Pure Matter and Mixtures in the part of granular structure of the matter in the seventh grade's science textbooks but it is never used in the other classes.

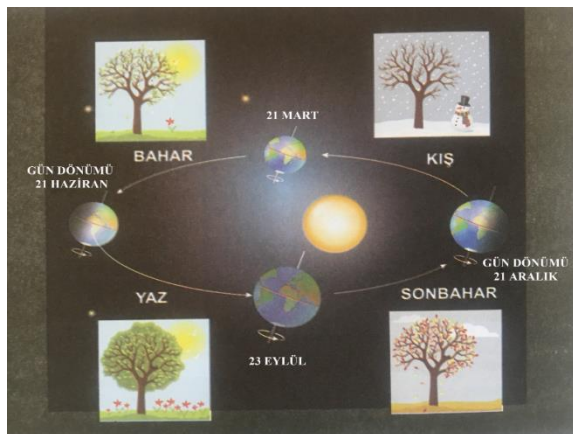
Sample citations related to the visual learning representations used in science textbooks are given in Figure 1.



(a)



(b)



(c)

Doğal Işık Kaynakları	Yapay Işık Kaynakları
Kendiliğinden ışık yayarlar.	Işık yaymak için başka bir varlığa ihtiyaç duyarlar.
İnsan etkisi olmadan, doğada kendiliğinden bulunurlar.	İnsanlar tarafından icat edilmişlerdir.
Uzun süreli ışık yayarlar.	Doğal ışık kaynaklarına göre daha kısa süreli ışık yayarlar.

(d)

Figure 1. Sample Images in Science Textbooks [(a) Çiğdem, Minoğlu Balçık and Karaca (2018, p.115), 6th grade gas particles illustrated dictionary image; (b) Gezer (2018, p.26) Visual of the internal cross- sectional diagram of a 7th grade animal cell; (c) Aytac, Türker, Bozkaya and Third

(2018, p.20) Visual of flow diagram in the 8th grade seasons in northern hemisphere; (d) Yiğit (2018, p.129) Visual of Table of 3rd grade unit differences between natural and artificial light sources].

DISCUSSION AND CONCLUSION

In this study, the 3rd and 8th grade's textbooks prepared to be taught in science classes are examined in terms of visual learning representations at primary and secondary schools within the body of the Ministry of National Education in Turkey in 2018-2019 academic year. The findings of the study reveal three main results. The first result of the study shows that the visual learning representations in the textbooks are mostly made up of the simple diagrams. However, it is found that synthetic diagrams and table visuals are the most commonly used visuals in comparison to other visuals in pursuit of simple diagrams in all the discussed books. The results of content analysis carried out by Guo et al. (2018) about visual learning representations in science textbooks in grade schools show significant similarities to those of the present research. The researchers ascertained that the most commonly used visual learning representations in the third and fifth grade science textbooks are diagrams. Besides, Liu & Khine (2016) ascertained in a research about the types and characteristics of images in science textbooks that they substantially consist of diagrammatic images. Tippet (2016), in his extensive study of literature studies on diagram-based learning between 2002 and 2014, ascertained that the use of this visual learning tool in science courses contributed significantly to being understood better of concepts by the students. In addition, many studies have shown that diagrams enable students to understand this information more easily by visualizing complex and broad information clusters in science for them (Cromley et al., 2013; Preston, 2016; Tippet, 2016; Waldrup & Prain, 2012). It is emphasized in many studies that tables which is one of the most commonly used visual in science textbooks serve for students' understanding information more easily by simplifying complex and intense science content (Akçay & Akçay, 2018; Coleman, McTigue and Smolkin, 2011; Danish & Enyedy, 2007; Liu & Khine, 2016). Therefore, the fact that both diagrams and tables are frequently included in all of the science textbooks examined in this research can be interpreted as these books' serving an important purpose in terms of the image types expressed in supporting students' learning of science. However, it is clear that the science textbooks used in primary and secondary schools need variety to be offered except for these two visuals in terms of visual learning representations.

The second result of the study shows that the distribution of visual representations according to units is not balanced. It is found that the use of illustrated dictionary especially on the basis of the fourth unit at the secondary school level is considerably higher than those in the other units. In addition, the table image is also used in this unit a lot more than other visuals. According to this result, after an overall assessment, it can be said that the required balance is not taken into consideration in terms of the variety and distribution of the images used. The result of this study showing a disregard of a balanced distribution of units in terms of visual learning representations bear a resemblance to Coleman & Dantzer's (2016) researches. In this study, it is pointed out that the visual representations in physics units in the science books in the USA are more numerous and more diverse than other science fields, especially biology and earth sciences. Also, Qasim & Pandey (2017) found that visuals used in physics subjects were more preferred than those used in chemistry and biology in their content analysis regarding visual representations in science books. The results of this research can be interpreted as a disregard of a balanced distribution of units in terms of visual representations while science textbooks in Turkey are prepared. Therefore, it is understood that science textbooks need to be rearranged in terms of visual learning representations according to units at each grade level.

The third result of the study reveals that the visual representations used in science textbooks do not undergo significant change according to the grade level. When all grade levels of both primary and secondary schools are examined, it is understood that the illustrated dictionary diagram which is simple diagram stands out with a big difference. In addition, it is found that synthetic diagrams and table visuals are the most commonly used visuals in pursuit of the illustrated dictionary diagram at all grade levels. In addition, it is understood that they show a similar distribution at each grade level when the rarity of the other visuals and the non-use of them is observed. In a similar study, Nakiboğlu &

Çamurcu (2014) concluded that the textbooks did not show a significant difference in terms of the use of graphic editors for different grade levels and the number of graphic editors used in the books was not sufficient. By contrast, Postigo & López-Manjón (2019) examined the primary and secondary school science books in Spain in terms of visuals. As a result of the research, the researchers found that the visuals in the primary and secondary school books had significant differences in terms of their types and structures according to class level. In a similar study, Nakiboğlu & Yıldırım (2018) determined to what extent images are included in the secondary school science textbooks and which types of images are available. At the end of the study, the researchers remarked that the distribution of examined secondary school science books is quite different according to grade level. Pinto (2002) points out that the characteristics of visual learning representations should differ significantly according to the age and achievement level of the student. Therefore, science books to be taught in schools should be prepared by taking these factors into consideration.

In science classes, students have difficulty in processing scientific texts in books into their minds effectively. Visual representations play an important role to overcome this situation and to process information into their minds effectively (McTigue, 2009). Therefore, while the science textbooks are being prepared, much more attention should be paid to the arrangement of visual representations. When the results of this study are taken into consideration, it can be said that many images in the related literature are limited in order to support the texts in the books. The related literature emphasizes that the number and variety of visual representations in science textbooks have increased in recent years (Coleman & Dantzler, 2016). In this context, it is understood that the visual representations in science textbooks in Turkey should be enriched. Especially analytical diagrams (internal and external cross-sectional diagrams) are very effective in understanding many complex structures in science, since the visuals show the internal structure or hidden processes of the objects (Moline, 2011). It is important to integrate these texts with the correct visual representations to facilitate student's understanding many complex information presented in science textbooks. Because the addition of visual learning representations prepared in accordance with the scientific texts in the science textbooks will help students relate, understand and remember information more easily. It is often inevitable that students' attentiveness and motivation will be diminished due to the intensity and confusion of knowledge in the field of science. This can be solved by increasing the number and variety of visuals summarizing the content of knowledge in science textbooks for primary and secondary school students.

Suggestions

In line with the results of this research, the following suggestions may be presented to those who will prepare new research and science textbooks:

In this study, the current structures of the textbooks used in science courses in primary and secondary schools were examined in terms of visual learning representations. Considering the results obtained from the study is regarded as important in the sense of uplifting science textbooks to be prepared in the future. In addition, interviews with teachers and students in the field on the intelligibility and use of visual representations are thought to contribute significantly to the improvement and enrichment of textbooks. Also, The Program for International Student Assessment (PISA), also funded by the Organization of Economic Cooperation and Development (OECD), is a study conducted to assess the achievement of countries in science education. One of the basic areas of PISA is science literacy. When the PISA 2015 final report is examined, it is understood that various factors that affect students' achievement in science are emphasized (Tas, Arici, Ozarkan & Ozgurluk, 2016). These factors are socio-economic indicators, equality of opportunity, time allocated to learning, teacher quality, physical infrastructure and educational materials (textbook, tools of information technologies, laboratory and library materials). According to the PISA 2015 final report, the inadequate or low quality of the educational materials is seen as an important factor hindering learning. Especially, it is highlighted in this report that this inadequateness is distinguished at the rate of 46% in Turkey (30% in OECD countries). It is also seen in this final report that ranking of students

in Turkey in science literacy lags quite behind. One of the sufficiency areas defined for success in science in PISA is the ability to define models and demonstrations. In this context, the importance of course materials to support students' visual literacy is much better understood. According to the 2015 PISA final report, the five most successful countries in terms of science literacy are Singapore, Japan, Estonia, Taiwan-China and Finland, respectively. Therefore, it is necessary to examine the textbooks, which are educational materials that have a significant effect on the science achievement of the students in these countries, in terms of visual learning representations. In addition to the scientific texts, while the textbooks are being prepared, it should be possible to establish commissions consisting of experts and science teachers who will work only on visual representations.

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An Effective Method to Develop Watching/Listening Comprehension Skills In Turkish Teaching

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Abstract

Traditional and frequently used approaches to develop listening skills and listening teaching mostly word and sentence-centered instead of a holistic approach to the meaning of a discourse; disregarding the fact that words and sentences gain meaning in a discourse, i.e in a context. Therefore, listening should be regarded as an active process, however traditional listening approaches regard listening as a passive / and static process. Thus, in this research, a new approach to listening teaching, a discourse-oriented approach was studied, introduced and offered to eliminate these deficiencies. The research was designed as one-group pre-test post-test experimental study to determine the effect of discourse analysis on the given sample of 17 students in 5th grade. As data collection instruments, an identification form, achievement tests, evaluation forms and a questionnaire were developed and used in the process. Correlation analysis, t-test and regression analysis were employed to analyse the data. As a result of the study, it was found that listening skills of the students were improved in the process through discourse analysis method by comprehending the material listened/watched thoroughly. The improvement was reflected in the comparison of their pre and post test results and showed in tables. Moreover, their gradual progress was evaluated through the criteria developed and demonstrated in graphs. Additionally, students developed positive opinions about using a discourse-oriented approach to improve listening skills which was reflected on their responses for the questionnaire items.

Key words: Turkish teaching, listening/watching skills, discourse analysis method

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INTRODUCTION

Listening

Hearing is a congenital ability if there is not a medical problem in the sensory organ and brain and it is a pre-requisite for listening. Whereas listening can be turned into a skill that can be used on purpose on the condition that if it can be developed in learning environments systematically and through a specific program.

Listening is defined by Demirel (2003) as a skill of understanding speaker's message correctly and reacting accordingly; by Engin and Birol (2000) as a psychological process that starts with being aware of and paying attention to sound and speaking images, continues with identifying and remembering certain auditory signs; and that ends up with making sense of them. Additionally, listening is an active process which is required for communication that includes receiving and interpreting the message (Umagan, 2007). It is also a kind of process in which an individual understands, interprets, evaluates, organizes, identify relationships and picks what s/he regards as important and valuable to store in mind out of what is put forward through speaking (Taşer, 2000). From this aspect, listening is a skill that also includes comprehension and thinking skills.

Our education system aims to educate individuals in terms knowledge, skills and behaviors integrated in their competences.

The competencies for the development of students in terms of skills needed in personal, social, academic and business life at both national and international levels were identified in Turkey Qualifications Framework (TQC). The TQF defines eight key competencies and one of them is as follows:

Communication in mother tongue: Expressing and interpret concepts, thoughts, opinions, feelings and facts both orally and in writing (listening, speaking, reading and writing); Engaging in linguistic interaction appropriately and creatively, in all kinds of social and cultural context; as in education and training environments, work place, home and entertainment.

Moreover, specific purposes of Turkish teaching program (MEB, 2018) identifies its aims as;

- to develop listening/watching, speaking, reading and writing skills,
- to ensure the use of Turkish in a conscious, correct and attentive manner in accordance with the rules of speaking and writing,
- to develop pleasure and awareness in the language by enriching the vocabulary by taking the material which was read or listened / watched as a starting point; to improve worlds of emotions, thoughts and imagination in students.

As can be seen, comprehension through listening/watching activities are clearly underlined in the last Turkish teaching program; but in terms of the time and importance given for the skills in Turkish lessons, the lowest rate is considered for listening skills. However, researches reveal that 9% writing, 16% reading, 30% speaking and 45% listening take place in daily life (Ailes, 1996).

Tompkins (1998), states that an individual spends as much time for listening skills as s/he spends the total amount of time for all the other skills. Most of the knowledge is gained and learnt at school by listening. The researches on listening stated that it is the language skill which is acquired firstly and mostly used in human life (Cemiloğlu, 2004; Doğan, 2011; Güneş, 2007; Tompkins 1998; Yalçın, 2002). These facts underlie the necessity of giving importance to listening activities in learning and education environments.

Despite its importance and crucial role in human life; just as in Turkish teaching programs, the learning area of listening has also been left behind in Turkish textbooks and in-class activities (Gündüz & Şimşek, 2014).

According to Gündüz and Şimşek, listening is also related to intelligence, since clever children are also good listeners. Based on the fact that listening is a type of skills that can be developed through education; in this sense, Turkish teachers have important responsibilities in the development of this area of skill to higher level.

Among the reasons for not being sufficiently focused on the listening activities in Turkish lessons, it can be listed that the importance of listening skills can not be fully understood and the lack of sufficient knowledge about listening (Yılmaz, 2007).

Discourse Oriented Listening Approach

Traditional and frequently used approaches to develop listening skills and listening teaching mostly word and sentence-centered instead of a holistic approach to grasp the meaning of a discourse; disregarding the fact that words and sentences gain meaning in a discourse, i.e in a context. Therefore, listening should be regarded as an active process, however traditional listening approaches regard listening as a passive and static process. Thus, in this research, a new approach to listening teaching, a discourse-oriented approach was studied, introduced and offered to eliminate these deficiencies.

Discourse analysis can be counted as a comparatively new field and there are still many debates, and gaps in our understanding of it. However, it affects text-oriented language teaching by providing new insights and perceptions in all areas of skills, including listening. Some opportunities, instruments to analyze a text (written or oral) and principles and postulations that discourse analysis offers such as cohesion, coherence, context, schema, relevance, intentions, culture etc. are crucial to develop reading and listening comprehension by improving communicative competence and by offering socio-cultural context-based, cognitive, structuralist and active process.

A search for more communicative tasks, techniques and methods has also increased as the communicative approach developed in 1980s. Teachers of language (first or second) always need to focus and develop students not only on grammar but also pragmatics. Accordingly, integrating discourse analysis method with the authentic materials of discourse in language lessons to improve listening skills meet the expectations of functional and communicative aims of language lessons. Moreover, important postulations and views of discourse support the need of such an integration. These can be listed as communicative competence; context, language use and variation and authentic material; and negotiation of intentions, choices and interpretation (Cots, 1996). Communicative competence can be described as a learner's ability to communicate and it includes the knowledge of the extension of structures in language such as grammatical knowledge, its feasibility in terms of psychology, appropriateness in terms of context, speakers and listeners (Hymes, 1972). Language is varied in use and assumes different functions depending on the context, aims and intentions of the speakers. Such kinds of language lessons require the use authentic examples of language use, so students can appreciate full potential of the language, develop language. Moreover, communication cannot be described as the simple transfer of pre-existing meanings and receiving them. Actually, meanings are produced through the negotiation of intentions and interpretations during communication, orally or in written way. This approach to language teaching sees language not only 'for communication' but also 'as communication'. Language skills can be developed by *using* it for successful communication, therefore the aim of language teaching provide opportunities for learners to communicate and use language, so the method offered to develop language skills should provide opportunities for learners to experience and practice relevant instances of communication by taking socio-cultural context into regard.

Discourse based model and perspective on language teaching stress concept of shared knowledge, which is in the center of successful interpersonal communication. Classroom pedagogy

can no longer limit itself to the linguistic and grammatical issues, its activities and planning are needed to include sociocultural and pragmatic considerations (Olshtain & Celce-Murcia, 2001). In order to use language, native or second language, effectively, the language user needs to be aware of the various factors that have an effect on varied use of language and human communication. In discourse-oriented approach for language pedagogy, shared knowledge consist of several subcategories as: content knowledge, context knowledge, linguistic knowledge, discourse knowledge, etc. (Johns, 1997). Thus, the issue of shared knowledge is very important in modern language pedagogy, in teaching first or second language.

Discourse analysis, provides all of the above opportunities and interactive environment for language lessons by creating contexts for interactive listening-speaking activities and by illustrating speaker/listenere and reader/writer exchanges. Additionally, it provides opportunities to process codes and language in use in different situations and contexts. These are necessary to create learning environments where all the skills regarding communication are developed. Moreover, since discourse analysis represents discourse world that identifies human communication, it is so important in language lessons. Discourse analysis explains intended meaning conveyed through text, so analyses all the choices and relationship between them. Discourse is also related to pragmatics that represent interpreted meaning, which can be derived at the end of language processing. Both of them are based on context. Therefore, the methods, that will be used in lessons, should focus both on the strategies to produce messages which are used in oral or written texts, so learners can comprehend the ways that the 'intent' is conveyed and strategies to interpret an oral or written text and speaker's intent; and to so develop skills to infer meaning from what they listen (Olshtain & Celce-Murcia, 2001).

In this context, the main objective of this study is to investigate the effect of discourse analysis method on listening / watching skills in Turkish lessons and to further trace developmental differences in listening skills brought by such a discourse-oriented method. In accordance with this main aim, sub-objectives are as follow:

- To investigate the effect of discourse analysis method on students to interpret objectively, approach critically, and evaluate what they listen / watch; and to produce new ideas by using information that they get through listening/watching
- To investigate the effect of the discourse analysis method on students' ability to analyze the background information of the messages, to comprehend the missing parts and to develop alternative perspectives to the ones that have been already presented.
- Turkish courses; to make suggestions in order to benefit from discourse analysis for Turkish lessons to be more effective, text-oriented and structured according to constructivist approach.
- It is aimed to find ways to develop higher-order thinking by using discourse analysis method skills in Turkish lessons as a part of listening training

METHOD

Research Model

This research was designed as one-group pre-test post-test experimental study (Karasar, 2016). It is a type of research design that is utilized to determine the effect of a treatment or intervention on a given sample. In this type, the research denotes that all participants are part of a single condition—i.e. all participants are given the same treatments and assessments. It has a linear ordering that requires the assessment of a dependent variable before and after a treatment is implemented. Therefore, the effect of a treatment is determined by calculating the difference between

the first assessment of the dependent variable and the other assessments, for example, post-test (Allen, 2017).

Study Group

In accordance with the experimental design, a model with one study group pre-test post-test was adopted. Before selecting and determining on the group, information was gathered about the level of listening / monitoring skills of the 5th graders from Turkish and social sciences teachers in Erzurum, YBO. The relevant group was formed by checking the averages of Turkish lessons notably and other lessons in the 4th grade. Thus, a group of 17 students consisting of 8 female and 9 male students was determined.

Data Collection Instruments

As a data collection instrument, *an identification form* to gather socio-demographic data, to get information about the gender of the students, their reading frequency and the educational status of their parents.

In addition, *achievement tests* which were structured and developed differently for each different text to be conducted after each listening / watching activity. Questions in the achievement tests were used after consulting to the experts in teaching Turkish and in the field of assessment-evaluation in terms of their content, their appropriateness to student level, validity (scope and appearance validity) and reliability. The pilot application was conducted in a school to 95 students with varied socio-economic levels. The data obtained from the pilot application were evaluated and analyzed by Alpha reliability. Non-discriminatory questions were removed, and finally, we ended up with tests for each different listening practices consisted of different numbers of questions. In the Cronbach's Alpha reliability analysis, Alpha was found to be 0.712 for the text, 'Forsa' and 0.765 for the text, 'Çocukluk' and 0.772 for 'Okuma Kitapları'. This shows that the achievement tests prepared had the high level of reliability.

Again, starting from the pre-test, an *evaluation form* consisting of 10 criteria developed by the researcher and used for each listening activity to assess and evaluate students' performances. In the process of developing this form, 5th grade listening objectives of Turkish Teaching Program were taken into consideration. The elements that will affect the listening skills of the discourse analysis method were integrated into the structures that will lead to acquisition of objectives mentioned in the program. Initially, 15 questions were prepared for the form, these questions were consulted to 3 program development specialists, 3 Turkish teachers and 2 academicians who have been studying in the field of discourse analysis. The opinions received in relation to the questions were classified as consensus / disagreement by using Miles & Huberman (1994)'s following formula [$\text{Agreement} / (\text{Agreement} + \text{Disagreement}) \times 100$] and 10 questions with high consensus were agreed to conduct students. Face validity, also called logical validity, was examined to decide on the validity of the form. Face validity refers to the degree to which a procedure, a test or assessment, appears relevant and effective in terms of its stated aims, covering the concept it purports to measure (Oluwatayo, 2012). In this context; opinions received from subject specialist; and also from an independent group of 5th grade students. Thus, it became possible to understand whether there was a significant relationship between the researched structure and phenomena in the scope of listening / watching study and whether the expressions determined for listening performances were appropriate to the target audience. Thus, the reliability and validity examinations of the form were completed and put into practice. Skills and outcomes determined to assess through this form were observed and evaluated.

A *questionnaire* consisting of 28 items was prepared to be conducted on the study group at the end of the process. At the beginning of the process, before conducting it on the study group, an independent group of 51 students was formed, discourse analysis method was studied with them and then the questionnaire was applied to this group. The reliability of was examined by Cronbach Alfa

and 7 items with alpha value lower than the required one, were excluded from this survey. The Cronbach Alpha result of the questionnaire was found as (.773) and by also getting and evaluating the opinions of the assessment and evaluation experts, the reliability of the instrument was obtained in this way. Thus, out of 28, 21 items were selected at the end of the process, to conduct on the study group.

Cronbach's Alpha Result:

Cronbach's Alpha .773	Cronbach's Alpha Based on Standardized Items .783
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Questionnaire form prepared in the context of critical thinking, creativity, analytical thinking, effective use of skills, problem solving, effective use of language; were scored as 'Strongly Agree (5); Agree (4); Undecided (3); Disagree (2); Strongly Disagree (1).

Data Analysis

In order to analyse the data, correlation analysis, t-test and regression analysis were employed.

Pearson Product-Moment Correlation analysis was conducted in order to examine the relationship between the variables in terms of pre-test, post-test results and the achievements of students on other texts which were used in the process. Correlation (Pearson Product-Moment Correlation) analysis is generally used in descriptive and experimental researches in order to examine the relationship between two continuous variables (Seçer, 2017). Accordingly, in this study, it was conducted on the pre-test, post-test results and the data gathered through identification forms such as; the educational status of the parents, gender and reading frequency of the participants. Thus, it was examined whether there was a significant relationship between the variables and the relationship between the data was determined for the gap analysis which would be conducted. All the findings of the analyses were shown in the tables. In order to be able to conduct such an analysis; after each listening / watching activity, the students' answers to the achievement tests for the texts 'Forsa' (pre- and post-test), and 'Çocukluk' and 'Okuma Kitaplarım' were graded according to PISA (Program for International Student Assessment Program) rubric as; FULL POINT (2); PARTIAL POINT (1); ZERO POINT (0)

In order to examine whether there was a difference between the averages of these quantitative data was significant, *t-test* was used and the results were shown in tables. Additionally, regression analysis was also carried out in order to determine to what extent the relationship was significant. In this context, the relationships which were determined through t-test results were interpreted. In this way, the extent of the effect of discourse analysis method on the post-test; 'Çocukluğum' and 'Okuma Kitaplarım' was aimed to be seen. The effect which was observed was reflected in the table.

In each study, the performances of the students in terms of listening skills, starting from the pre-test, were evaluated according to the 10-criteria-evaluation form prepared by the researcher and these evaluations were analyzed in terms of their sum by Likert-scale determined. Thus, their listening / watching skills were scored on Likert scale as: YES (3); PARTIAL (2); NO (1). The sum of the obtained data were shown comparatively in graphs to show progress of the students gradually. In addition, the sum of these data was expressed in a graph showing the development of students throughout the whole process.

At the end of the process, the questionnaire consisting of 21 items was examined and analysed; the standard deviation and the mean of the answers were calculated and the result was shown in the table.

Experimental Process Steps

After the pre-test, 6 weeks were allocated to the practices with study group. In this context, preparatory studies, discourse analysis activities, listening / watching activities by using discourse analysis method were carried out on 3 texts chosen from MONE (MEB) 5th grade Turkish course book. These texts are; *Forsa*, *Çocukluğum* ve *Okuma kitaplarım*.

During the preliminary study, the methods and techniques used frequently in listening/watching training was adhered to. In this process, the methods and techniques that will awaken the desire to learn, direct them to think, and allow them to find the answers themselves, were employed; especially critical listening techniques were utilized. Since, in the context of 5th grade listening / watching objectives, some of the listening / monitoring strategies would be used in the whole process; activities on distinctive listening, effective listening, critical listening and empathic listening were carried out.

Prior to listening, a number of strategies were also included. Strategies such as goal-setting, mind-reviving, making predictions, questioning, brain storming were employed in both the preliminary study and during discourse analysis activities on the texts chosen.

During the listening, strategies such as note-taking, question-answer activities, visualization / symbolization, and analogies were also included.

After listening; practices by using the strategies such as summarizing, establishing cause-effect relationship, self-assessment, inference and discussion were done

FINDINGS AND INTERPRETATION

Findings from Identification Forms

At the beginning of the process students were given identification form; and through this form, information was gathered about their gender, their reading frequency and the educational status of their parents. In order to investigate the effect of discourse analysis method on listening / watching skills by using this information; and to see whether there was a significant relationship between the pre-test and the results of the achievement tests for each listening/watching activity and for it to be a reference to other analyses, correlation analysis was conducted.

As a result of correlation analysis which was conducted for the data gathered through identification forms (The students' gender, the number of books that they read in a year and the educational status of their parents); and for the results of the achievement tests of the texts 'Çocukluk' and 'Okuma Kitapları'), and pre-post tests, the following conclusions were reached at:

Table 1. Correlation coefficients: Relationship between socio-demographic information, *Forsa* (pre-test, post-test), 'Çocukluk' and 'Okuma Kitaplarım'

	1	2	3	4	5	6	7
Gender (1)	1						
Education St. of Parents (2)	0.044	1					
Kitap Okuma (3)	0.246	0.886**	1				
Forsa-Pre- test (4)	0.400	-0.443	-0.264	1			
Forsa- Post test (5)	-0.249	-0.575*	-0.442	0.293	1		
Çocukluk (text) (6)	0.345	0.374	0.428	0.138*	-0.307	1	
Okuma Kitaplarım (text) (7)	0.026	0.53	-0.102	-0.156	-0.109	-0.180	1

**p<0,01 , *p<0,05

As a result of correlation analysis made it was found that; there was no significant relationship between gender and other variables. However, there was a positive significant correlation between reading frequency and parents' educational status of students. Similarly, a positive significant relationship was found between 'Çocukluk' and 'Forsa' (pre-test). There was not a relationship between gender and their achievement levels on the listening activities. There was a negative relationship between post-test (Forsa) and educational status of parents. Lastly, a significant relationship found between the results of achievement tests and pretest.

Apart from the correlations seen in the correlation analysis above, since the achievement tests were on the focus of this research, it was decided to make gap analysis between all the practices/achievement levels of the students starting from the pre-test. Since the result showed a normal distribution, t-test, which is a parametric test, was used.

T-test Analyses

Table 2: Pre-test and Post-test Results of Study Group

	N	MEAN	STD. DEVIATION	T	p*
Pre-test	17	13,6471	2,17776	-16,130	,000
Post- test	17	23,2353	1,95350		

* **Sig. (2-tailed)**

	N	MEAN	STD. DEVIATION	T	p*
Forsa (Pre-test)- Forsa (Post- test)	17	-958824	2,45099	-16,130	,000

* **Sig. (2-tailed)**

The pre-test (Forsa) text of the study group students at the beginning of the process was also conducted as post-test at the end of the process after using discourse analysis method in lessons. Following the listening / watching activity, a test was carried, thus, it was tried to determine whether there was any difference between pre-test results and post-test results. The result of the t-test was found to be P .000. As a result of analyzing pre-test and post-test results comparatively, significant difference result was found between two, in favor of the post-test.

In discourse analysis, it is known that elements of cohesion are important reference focal points that reveal the syntax and semantic integrity of a text. In order for students to reveal the relationship between discourse and modal determinants, through questions in the test, we asked students to define the use of these elements in terms of their contribution to the text that they listened. It was aimed that students comprehend how is the person who speaks, sets fort the discourse and meaning through the modality (modal) structure of the text. In the process; it was emphasized that the meaning is provided mostly through tone of voice of the speaker; and that verdictive structures have the most important role in the discourse analysis.

When we look at the historical adventure of discourse analysis in the history of linguistics, it will be seen that language is taken as a source of culture; and therefore, listening/watching activities, which is a speaking, communication, sense-making and interpreting process of language, can be seen as an cultural act. In this respect, through the questions on the test, students were expected to identify clues about the social status of people in the texts. Thus, they would also analyse and interpret the relationship between language and social structure. With the emphasis that the reference values of words are social elements, a process for listening / watching skills was structured.

Again on this listening text, Forsa, questions were developed in the context of functions of language. Students were expected to discuss whether they would need extra information to fully comprehend the text, regarding the topic of the text based on the past. Students needed to recognize

the fact that there are structures reflecting the vocabulary of the period in which the text was produced outside the meaning imposed on the word or word groups within the systematics of language in its own functioning. Therefore, comprehension of a texts listened, may necessitate other information besides the known semantic context. Thus, it was implicated that in order to understand the semantic structure of a text and to make sense of it in the process of listening / watching, the existence and knowledge of such information is so crucial. In this respect, the results of the performances of students' regarding these expectations during listening activities were shown in the table 2.

Table 3: Results of Pre-test (*Forsa*) and the achievement test on the text, *Çocukluk*

	N	MEAN	STD. DEVIATION	T	p*
Pre-test	17	13,6471	2,17776	-13,748	,000
Çocukluk	17	19,9333	1,98086		

* **Sig. (2-tailed)**

Forsa (pre-test)-Çocukluk	N	MEAN	STD. DEVIATION	T	p*
	17	-6,00000	,43644	-13,748	,000

* **Sig. (2-tailed)**

In the second week of the process, another text, 'Çocukluk', was analysed by using discourse analysis method. After that, a listening / watching practice was done by using questions which were formed in the context of listening skills and discourse analysis premises. Students' performance in this listening activity was compared to the results of pre-test. Thus, it was tried to determine whether there was any difference between the two results. The result of the t-test was found to be as P .000. Therefore, as a result of the comparison between the pre-test results and the results of second listening activity, significant difference was found in favor of the second one on the text of 'Çocukluğum' in which discourse analysis method was used.

In discourse analysis, the fact that the reference values of the words are known is one of the important perspectives that determines the operation of the discourse as well as the text to be analyzed. Accordingly, questions were developed for students to find the main theme of the text, explain the way they have found it and that to which words, phrases they refer to reach at that finding. Additionally, the way that poet speaks to himself and to the listeners and the motivation behind it, were also the points to which students were expected to pay attention and discuss. Thus, it was tried to be understood whether the facts such as discourse and language, linguistic choices of the person who made the discourse (speaker), and the contents of the discourses can be interpreted or not. Therefore, attention was paid to these facts and it was tried to make students feel them in the listening / watching process. In this respect, the performances of students' regarding these focal points during listening activities were shown in the table 3.

Table 4: Results of Pre-test (*Forsa*) and the achievement test on text, *Okuma Kitaplarım*

	N	MEAN	STD. DEVIATION	T	p*
Pre-test	17	13,6471	2,17776	-8,109	,000
Okuma Kitaplarım	17	17,4706	1,73629		

* **Sig. (2-tailed)**

Forsa (pre-test)-Okuma Kitaplarım	N	MEAN	STD. DEVIATION	T	p*
	17	-3,82353	4,47151	-8,109	,000

* **Sig. (2-tailed)**

In the third week of the process, another text, 'Okuma Kitaplarım', was analysed by using discourse analysis method. After that, a listening / watching practice was done by using questions which were formed in the context of listening skills and discourse analysis principles. Students'

performance in this listening activity was compared to the results of pre-test. Thus, it was tried to determine whether there was any difference between the two results. The result of the t-test was found to be as $P .067$. Therefore, as a result of the comparison between the pre-test results and the results of third listening activity, significant difference was found in favor of the second one on the text of 'Okuma Kitapları' in which discourse analysis method was used.

In this step, it was aimed that students would think about and discuss the way in which information and meaning was presented, and whether there would be possible to present them in different ways. Therefore, it was tried to understand to what extent students could grasp the basic propositions of discourse analysis. It is emphasized that apart from the limited number of words in our vocabulary, messages, intentions, the choice of and use of language of speaker or listener should be interpreted in the internal structure of the language. Through the listening activities in this step, it was tried to be observed to what extent students understood that choice of words were intentional acts, and each of them and their references serve some specific functions and intentions regarding the message or the meaning of the text.

As a result, through the discussions on the premises of discourse analysis; tense, modalities, semantics, socio-cultural context, the stance of the speaker and other details about the speaker and their contribution to meaning, it was aimed that students had an idea about the structures in a texts and their contribution to create meaning. Thus, they would pay attention to these in the listening/watching activities, in other words, in the process of making sense and interpret.

Results of Regression Analysis

Table 5: Results of Regression Analysis on Pre-test (*Forsa*), *Çocukluk* and *Okuma Kitapları*

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
f1	(Constant)	11,486	2,260		5,082	,000
	Çocukluk	-,392	,217	-,446	-1,806	,093
	Okuma Kitapları	-,247	,284	-,215	-,871	,398

Regression analysis was made in order to determine how significant was the relationship which was reached as a result of t-test. T-test results of achievement tests have an effect of $f= 1726$ on post-test; *Çocukluk* and *Okuma Kitapları*. This effect was shown quantitatively in Table 5.

Analysis of Results of Questionnaire

Table 6: Results of Questionnaire

Questionnaire	N	MEAN	MEDIAN	STD. DEVIATION
	17	93,5294	94,0000	3,90701

A questionnaire consisting of 21 items was applied at the end of the process in order to get the opinions of the students after the listening / watching activities by using discourse analysis method. Thus, the effectiveness of the method and students' gains by using it were tried to be revealed. Data in the questionnaire forms were analysed in terms of standard deviation, median and average; standard deviation value was found as 3,90701. This that means that students replied items mostly as "I agree", that corresponds to (4) on the Likert scale. In this context, it has been found out that the discourse analysis method has a positive effect on Turkish listening / watching skills.

In order to contribute to the understanding of the process in which the effect of the discourse analysis method on listening / watching skills which is structured by taking creativity, creative thinking and critical thinking skills into consideration and in focus; it was tried to get opinions of students through a survey. Thus, for the items as;

I was able to develop different listening techniques according to the type and genre of the things that I had listened/watched in the process.

I can put forth new and different knowledge and thoughts starting off from my own thoughts by using this method.

were observed that students had positive opinions on the method by answering them as “Strongly Agree” and “Agree” on the questionnaire. In this sense, it can be stated that the discourse analysis method can be used effectively in developing creative thinking and communication skills.

In the context of critical and analytical thinking skills used to reveal the underlying meanings of those which have been already expressed, items were developed to get the opinions of students on them:

I can listen to any text by determining on different aims.

I can identify semantic distinguisher and distinctive elements which create a frame of mind and thoughts of the material spoken or discussed.

were marked as “strongly agree” and “agree” as can be shown through the results of questionnaire above.

The items on the survey, which were developed in the context of communication skills:

I was able to tell what I wanted to express through my own thoughts on the texts that I listened/watched by using discourse analysis method.

In order to understand the outcomes and achievements of students on using vocabulary skilfully and effectively, which is related to language skills, besides communication skills, the following item was structured;

When I listen/watch, I understood that, words and sentences gain meaning according to the place in which they are used.

For this item and its proposition, most of the students expressed that they agree with it. Therefore, they think that, discourse analysis also made contributions in this aspect, too in listening/watching skills.

Similarly, students stated positive opinions about the item by marking “Strongly agree” to it:

Compared to previous Turkish lessons, I think I was more active in listening activities in the lessons which discourse analysis method was used.

In this sense, participation in the courses structured with the discourse analysis method has increased to the highest level; it has also been seen that the method has a special and important feature that puts forth initiatives on the proposals affective areas such as self-expression, feeling that their ideas are important and given importance to, and self-confidence. Discourse analysis method, allows and encourages students to tell their ideas in the process of making sense on the material that they listen/watch. Since, meaning is created in the process with the participation of all the participants collaboratively and by following the clues that the creator of the texts (speaker/writer) have produced and designed in the text, students were willing to express their opinions, so they were more active and enthusiastic about the process and lessons in which discourse analysis were used as a method.

Discourse analysis is both a multidisciplinary and supra-disciplinary area; in this regard, questionnaire items were created, related to main principles of discourse analysis, in order to understand the effect of discourse analysis and its cognitive processes. The item is;

I can define the purpose of the production of a text / speech that I listen / watch by discourse analysis method.

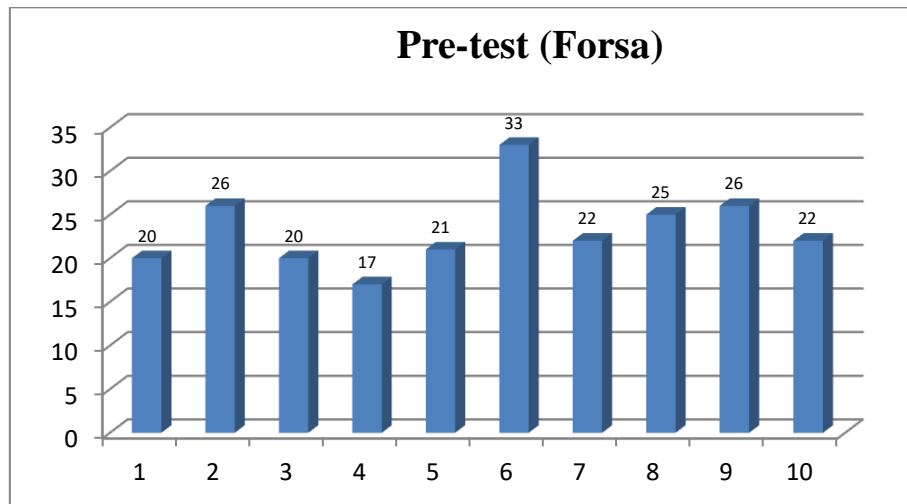
By discourse analysis, I can understand that the words and phrases in a text that I listen are the products of conscious choices in the process of listening/watching.

These items were also mostly marked “agree” in the context of the answers given. It can be said that in this sense, the methodological elements and the basic propositions of the method were perceived and grasped correctly by the students. This comprehension was also observed in the practices made at the end of the process. The same situation was concretized and observed by the researcher in the context of the criteria identified in the evaluation forms.

Analysis of Assessment Forms

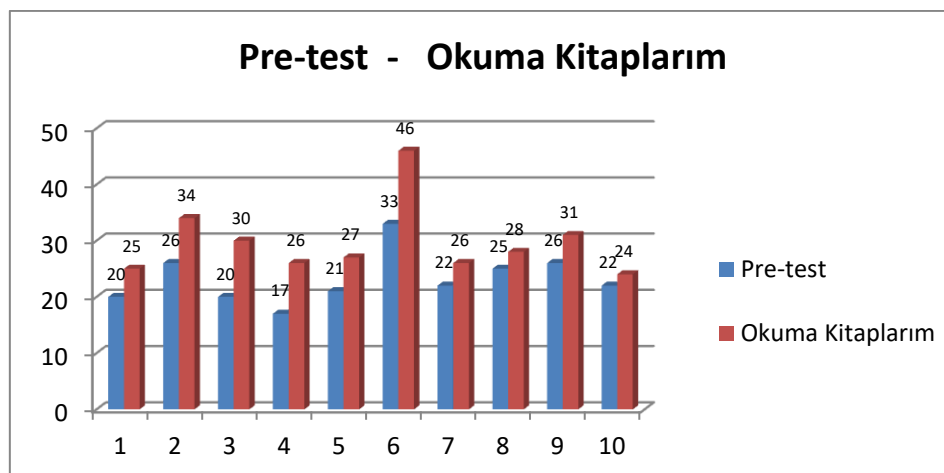
An assessment form consisting of 10 criteria was used from the beginning of the study; students' listening / watching skills were scored according to the determined Likert scale. The total scores of each activity were shown comparatively in graphs.

Graph 1: Total Scores of Assessment Forms: Pre-test (*Forsa*)



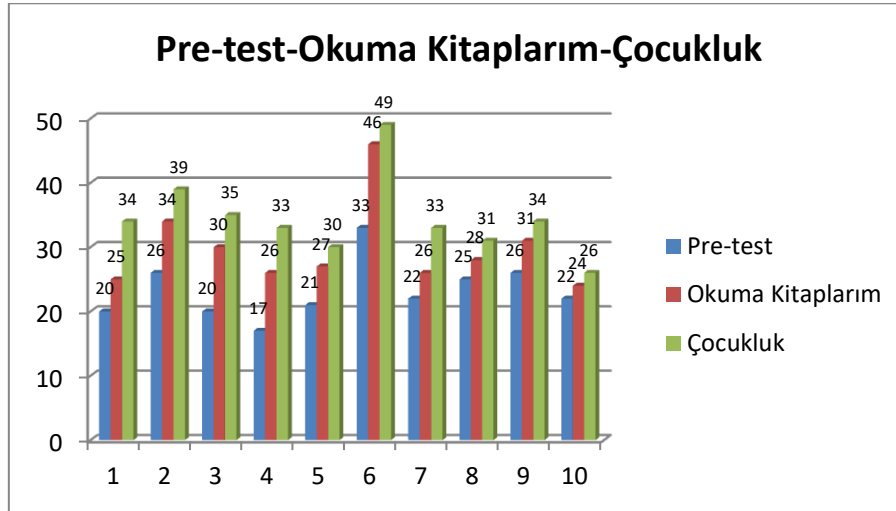
Students' listening performance on the text, ‘Forsa’, which was conducted as pretest, were graded according to the criteria on the assessment form and results were shown in graph 1.

Graph 2. Total Scores: Pre-test (*Forsa*) and *Okuma Kitaplarım*



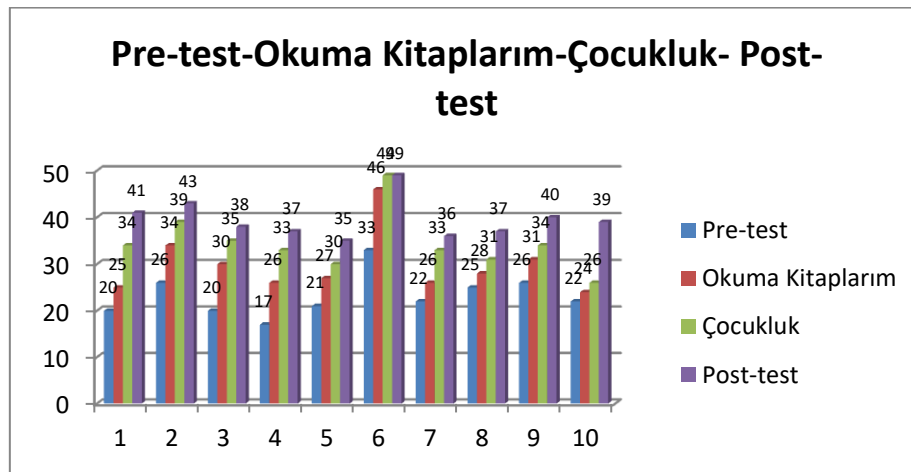
Students' listening performance on the text, 'Okuma Kitaplarım', were graded according to the criteria on the assessment form and results were shown in graph 2. Thus, by comparing the results with the ones in pre-test, students' progress and development were reflected on the graph.

Graph 3: Total Scores: Pre-test (*Forsa*), *Okuma Kitaplarım* and *Çocukluk*



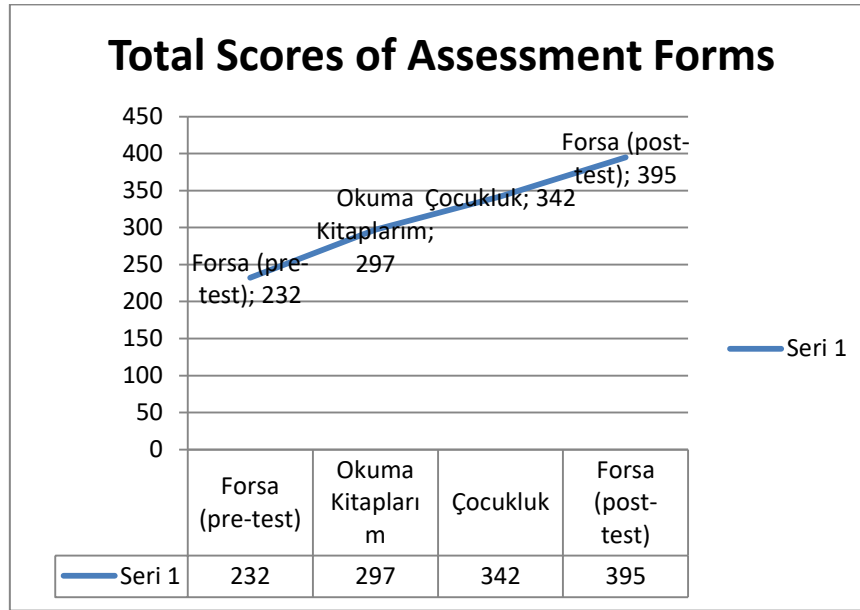
Students' listening performance on the text, 'Çocukluk', were graded according to the criteria on the assessment form and results were shown in graph 3. Thus, by comparing the results with the ones in pre-test and previous practice, students' progress and development were reflected on the graph.

Graph 4: Comparative Results of Assessment Form Scores



Students' listening performances in the post-test 'Forsa', which was conducted as pre-test, were graded according to the criteria on the assessment form and results were shown in graph 4. Thus, by comparing the results of post-test with the ones in pre-test and previous listening practices, students' progress and development were reflected on this graph.

Graph 5: Total Scores of Assessment Forms



The total results of ‘Forsa (pre-test), Okuma Kitaplarım, Çocukluk and Forsa (post-test)’ sums were given in Graph 5 in sequential way and in summary. The students' achievement in listening skills from the beginning to the end of the process was reflected in the observation forms.

DISCUSSION AND CONCLUSION

In the context of the findings obtained during this study where the effect of discourse analysis method in listening/watching skills was investigated for the sample of 5th grade students, the following conclusions were reached and discussed in this section.

Researches show that listening is the mostly used skill of an individual in his/her social life (Buzan, 2001; Kardaş & Harre, 2015; Maxwell & Dornan, 2001; Wacker- Hawkins, 1996). Therefore, models offered or developed to improve listening skills are so important and have a direct positive effect on learners in many areas of life. In this sense, we found as a result of this study, throughout the listening / watching practices structured by using discourse analysis method, the students were able to use the language in a more constructive and functional way, and were able to employ discussion and inquiry strategies more effectively. Thus, it can be concluded that, development of listening skills through discourse analysis method would create multi-faceted effects on individuals.

According to several studies conducted to improve listening skills; comprehension and meaning are important, and solve most of the problems related to listening comprehension (Emiroğlu & Pınar, 2013; Field, 1999; Ridgway, 2000). Accordingly, in this study, it was seen that through discourse analysis method, students were able to understand and express that *how and why a meaning which is presented (spoken) correct or not*, by using thinking processes. In this sense, critical thinking, which is the main proposition of discourse analysis, was used more effectively with the employment of this method and led to more effective learning.

In language teaching, like linguistics, mostly the *sentence* is seen as the basic unit of analysis; which means that all the things in the learning environment to language skills such as rules, principles, examples, exercises, and practices focused on individual sentences. Therefore, this approach has always eliminated the factor of context. When sentences are separated from context, it is impossible to reach at real meaning (Eryaman, 2008; Olshtain & Celce-Murcia, 2001). However, learners are needed to coach to be aware of different kinds of discourse features while listening / watching

anything. Accordingly, in the discourse oriented approach that we offered in this study, the whole oral discourse or text constitutes the basis for analysis. Discourse analysis adopts a method of analysis that requires the emergence of cognitive elements as well as linguistic structures. It contains important clues in terms of our understanding of the narrator's choices, in the text, spoken or written. Through discourse analysis method, students were able to analyse what they listen by decoding the elements that were not directly presented, were just implied through intentional choices of the author, in the field of listening / watching, which is a process of comprehension.

Metacognition can be defined as individual's conscious thinking process on his/her own learning; and his/her planning, monitoring and regulation of his/her cognitive processes (Brown, 1987). What is important at this point is; difference between the skills required for successful listening practices and a learner's own monitoring of his own comprehensial level of a text. In terms of learning, we can describe the function of cognitive processes as *facilitator* and of metacognitive strategies as *monitoring* (Flavell, 1976). Accordingly, as a finding of this study, the analysis of listened / watched material in terms of language and narration by using discourse analysis method stimulated the sense of discovery in the language in the students, and in this sense, it contributed to affective and meta/cognitive areas in terms of language awareness and language use. They became more aware of the intent, linguistic instruments and choices in a text by using discourse-oriented approach, so this helped them to develop better understanding of the material listened/watched in terms of these factors. Therefore, fully and consciously grasping the language in use, they were able to monitor their own listening and comprehension performance accordingly.

According to Melanlıoğlu (2012), if a student can ask questions while listening a text, that means the student has reached at his/her cognitive aim. According to the researcher of this study, one of the most important criteria in understanding the content is that the audiences / listeners can demonstrate the ability to ask questions to structure the information presented. This research, which was carried out on the effect of discourse analysis method structured with a student-centered approach on the listening / watching skills in Turkish, showed that learners had a positive impact on their ability to ask questions in structuring and interpreting information and had a desired effect on critical thinking and problem solving skills.

Discourse analysis method was effective in revealing concealed and hypothetical structures and making inferences. In this sense, students gained the structures related to the conceptual field of critical thinking and listening.

Throughout the listening / watching practices structured by using discourse analysis method, the students were able to use the language in a more constructive and functional way, and were able to employ discussion and inquiry strategies more effectively.

As a conclusion, this study offers a discourse-oriented approach as a method in language lessons to improve listening skills. Thus, it overlaps with the findings of the several studies conducted to immerse discourse into language teaching (Cook, 1989; Johns, 1997; Mc Carthy & Carter, 1994; Nunan, 1993; Olshtain & Celce-Murcia, 2001).

RECOMMENDATIONS

Both discourse analysis and listening are process-oriented development areas and needs multiple ways of evaluating and time. Therefore, the number of participants has to be limited to be able to observe improvement appropriately. So, for further researchers, it is suggested that other grade levels and skill areas may be studied in terms of the effect of discourse analysis on them.

Although discourse and formal, grammar-based language teaching may represent two different poles of views and perspectives if integrated well and in a way to support each other, discourse-oriented approaches could provide a wide range of resources, opportunities and instruments for 'language in use' which is always intended and pursued for communicative purpose of the learners.

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The Effect of Gender on Mobbing Experienced by Teachers at School: A Meta-Analysis Study

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Abstract

The aim of this research is to detect the effect of teachers' genders on mobbing they experienced at schools. As one of the methods used to synthesize research results, meta-analysis method was used in this study. It was determined that there are 72 studies which are deemed appropriate for the inclusion criteria of meta-analysis study. In this meta-analysis study, 72 studies which form a sample consisting of 24954 people were calculated. As a result of the process of combining in random effects model, a statistically significant ES which was at the level of -0.02 was found in favour of male teachers. When results are evaluated together, it is observed that there is a difference, which may not be considered significant, between male and female teachers in terms of teachers' perceptions about AM at school. As a result of the conducted moderator analysis, moderator effects of publishing type ($p=0,03$), of education level ($p=0,03$), and of gender of the researcher ($p=0,02$) were determined. It was observed that while mobbing perception of male teachers are higher in studies carried out in master's and doctoral theses, mobbing perception of female teachers are higher in studies carried out in articles. Moderator effects of school type (public, private, and public/private) ($p=0,63$) and of the region where the research was carried out ($p=0,17$) could not be determined. It was observed that mobbing perception of female teachers who work in Central Anatolia and Eastern Anatolia are higher compared to other regions.

Keywords: Mobbing, Teacher, Gender, Meta-analysis

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INTRODUCTION

Mobbing is a word derived from Latin which means intimidation, psychological violence, oppression, siege, harassment, disturbance or distress. Derived from the words “mobile vulgus” which mean “inconsistent crowd”, the word “mob” means irregular crowd which commits illegal violence, “community of guilty”, or “gang” in English (Aytaç 2017; Minibaş-Poussard and İdiğ-Çamuroğlu 2009). Translations which were adopted most by Turkish researchers for the term “mobbing” are “intimidation” (Aras 2012; Akkar 2010; Ertürk 2011), “psychological terror” (Özler and Mercan 2009), “emotional abuse” (Uzunçarşılı and Yoloğlu 2007), and “psychological violence” (Aydın 2009; Tutar 2004; Yaman 2009). In this study, (in Turkish version) instead of the term “mobbing”, the term “intimidation” which is commonly used as equivalent of mobbing was adopted. Mobbing is generally considered psychological violence or harassment by one or more people that arises from systematically hostile and unethical practices to other person or people (Leyman, 1996).

Acts of mobbing (AM) that teachers experience at schools negatively affect both efficacy of the school and performances of teachers. It was detected that mobbing in educational organizations weakens organizational environment and climate, and decreases teachers’ level of satisfaction at work and level of satisfaction in life (Matthiesen and Einarsen 2010; Topa Depolo and Domínguez 2007; Yaman 2010). At schools where AM is consciously or unconsciously carried out, the possibility for employees to experience dissatisfaction of job, lack of motivation, inefficiency, and even several physical disorders increases. Teachers might be exposed to mobbing from administrators, colleagues, parents, students, and other employees. Teachers might experience AM through discrimination, communication obstacles, not being assigned to important tasks, preventing legal rights, abasement, or sexual abuse (Aytaç 2014; Çelebi and Kaya 2014; Çiçek Sağlam 2008; Ertürk 2015; Robert and Mark, 2010). According to the research results of Heinz Leymann (1996) who defines AM and is considered an authority in his field, 55% of female employees and 45% of male employees are exposed to mobbing. Besides other demographical and behaviour qualities, gender of the victim can also be effective for the act of mobbing to start (Ertürk 2013; Shallcross Sheehan and Ramsay 2008; Topkaya 2011).

Research studies which were carried out on the victims of mobbing have revealed that mobbing varies by gender, age, and status, and it is practiced more on people who are in specific age groups (Leyman 1996). When it is considered from the perspective of gender, it is observed in the researches carried out in various countries in different times that males’ and females’ levels of experiencing mobbing in workplaces vary (Beswick, Gore Palferman 2006; Turan 2006; Van Gyes 2006). Gender reinforces negative effects of mobbing in social relationships in business life and private life on women during and after the mobbing experienced at workplace (Topkaya, 2011). In the study carried out by Topkaya (2011), it was observed that gender of women was effective in their mobbing experiences.

As well as demographical qualities such as gender, age, and personality, occupational qualities such as seniority and level of education are also effective in teachers’ experiences of AM or perception of AM (Aytaç 2017; Duffy and Sperry 2012). When mobbing studies carried out in education sector in Turkey were analysed, Ertürk (2005, 2011) stated that gender, duty and age are the variables in which the most significant differences are observed among the groups in the acts of mobbing faced by teachers and school administrators. In the studies carried out by Aydın (2009), Çomak (2011), Ekinci (2012), and Karabacak and Akın (2014), it was observed that female teachers were more exposed to mobbing compared to male teachers. In the studies carried out by Einarsen and Skodstad (1996), Gülle (2013) and Leyman (1996), female teachers experienced mobbing towards social relations and male teachers experienced mobbing towards violence.

The number and quality of the studies on the mobbing experienced in education sector in Turkey is increasing day by day (Aydın 2009; Aytaç 2015). In the studies carried out in Turkey in increasing numbers since 2000 which discuss mobbing at schools by using qualitative and quantitative methods (Aytaç 2017; Ertürk 2013; Karabacak and Akın 2014; Topkaya 2011), generally different

scales and different independent variables of teachers (gender, branch, marital status, level of education, faculty of graduation, seniority etc.) were used. As a result of these studies, results which were statistically significant and insignificant and showing different findings in terms of subgroups of independent variables were obtained. Within the scope of these results, the effects of gender roles and responsibilities on acts of mobbing and perceptions about mobbing that teachers experienced at schools were revealed.

As a result of the fact that different studies carried on AM had different results in terms of gender variable, Ertürk (2013), Karabacak and Akin (2014), and Aytaç (2017) stated that meta-analysis studies on this issue need to be carried out. It is important to detect whether gender roles of teachers are effective in their experience of AM or in their perception of AM. When the literature is analysed, since there is not any study which analyses the effect of gender on AM that teachers experience at schools through meta-analysis methods, this study shall contribute to the field. The problem of this study is to determine if the gender (male/female) is effective in mobbing perception of teachers. The aim of this research is to detect the effect of teachers' genders on mobbing they experienced at schools.

METHOD

Research model, data collection and data analysis sections are given in this chapter.

Research Model

Meta-analysis method was used in the study. Meta-analysis method is a method of systematically analyzing and synthesizing the data of quantitative studies on the same subject independently. The purpose of a meta-analysis is to reveal facts on similar topics, combine findings of several studies conducted at various times and places, reach the most accurate quantitative results through increasing sample size. Group difference meta-analysis method was used in the analysis of the data. In a meta-analysis study, two models are used to calculate the general effect size: fixed and random effects models. At the stage of combining studies (general effect), which model shall be used is decided in accordance with these assumptions, and model can be selected either before the study or at the beginning of the study. While fixed effects model is selected in replication studies, random effects model is suggested especially in social sciences since operational and procedural variance is not present in most of the studies. As one of the comparative meta-analysis methods, Group Difference method was used in the analysis of data (Aytaç, 2019; Cumming, 2012; Ellis, 2012; Hedges and Vevea, 1998). Q and I^2 statistics are also used in alternative model selection, and model can be selected. However, especially in social sciences, since the aim of synthesizing is to make unconditional inferences for most researchers, the best option is to choose random effects model (Card, 2012; Cumming, 2012; Dinçer, 2014).

Data Collection Tool

Master's theses, doctoral theses, and research articles which discuss this issue in Turkey were taken into the scope of the study. In order to have access to the relevant studies, the keywords "intimidation", "psychological abuse", "mobbing", "psychological mobbing", and "psychological violence" were searched in YOK National Thesis Centre and various search engines (Ulakbim, Google Academic *et al.*). As a result of this search, it was observed that there are 95 studies in the scope of this study. It was determined that there are 72 studies which are deemed appropriate for the inclusion criteria of meta-analysis study. As one of the basic inclusion criteria, in Turkey addressing teachers' perceptions of mobbing field work were taken. Inclusion criteria used in the selection of the studies which would be included in the research are given below:

(i) *Criterion 1: Published sources:* Master's theses, doctoral theses, and research articles published in the literature were taken into the scope.

(ii) *Criterion 2: The appropriateness of dependent or independent variables in the studies for meta-analysis study:* It was paid attention that studies included in meta-analysis studies to reach ES were empirical studies and that gender of teachers were taken as independent variable.

(iii) *Criterion 3: Its inclusion of quantitative data which is necessary for meta-analysis:* It was paid attention that it included quantitative data (average, standard deviation, number of samples, p value etc.) in order to calculate effect sizes which are necessary for meta-analysis,

(iv) *Criterion 4: Time/Years:* It was paid attention that studies were carried out in Turkey between 2007 and 2019.

Exclusion Criteria, Reliability and Validity of the research

Twenty-three different studies obtained as a result of literature scan were excluded from the carried out meta-analysis study since they were not deemed appropriate for the inclusion criteria because they were carried out in different samples (school administrators and academic staff), they did not have necessary statistical data for meta-analysis, and they included only qualitative findings. In this study, data were coded by using two coders. Cohen's Kappa statistics was used in order to provide reliability between coders which process studies to coding protocol, and the reliability was found to be 0.92. This result indicates a good concordance between coders.

The fact that all accessible studies which are deemed appropriate for the inclusion criteria of meta-analysis were scanned by using all data bases is an indicator of the validity of the research (Petitti, 2000). In the context of accessing to all studies as a result of the scan, it can be stated that validity was ensured.

Analysis of the Data

In this meta-analysis study, random effects model was used in the calculation of overall effect size. In the study, females were included the experimental group and males were included the control group. Therefore, if calculated effect size was positive, then it was in favor of females, if calculated effect size was negative, then it was in favor of males. Current study is applied a statistical pocket programme of 2.2.064 version for Meta-Analysis [CMA-Comprehensive Meta Analysis] for comparing effect sizes of each study with variances and groups (Borenstein, Hedges, Higgins and Rothstein, 2009). SPSS version 20.0 pocket programme has been used from coder reliability. Studies, meeting the inclusion criteria and were included for the current study, had 0,05 significant level. Therefore, significance level of the statistical analysis was determined at 0,05 level.

RESULTS

Findings acquired from researches within the scope of meta-analysis study (publication bias, forest plot, random effects model, and moderator analysis) are given in this chapter.

Publication Bias

In order to understand whether the studies included in the meta-analysis cause publication bias or not, methods such as Funnel Plot, Rosenthal's fail-safe N, Orwin's fail-safe N number, Duval's and Tweedie's Trim and Fill, and Egger's tests are commonly used in the literature (Duval and Tweedie 2000; Sterne and Egger 2005). In this study, publication bias was tested by using these four methods.

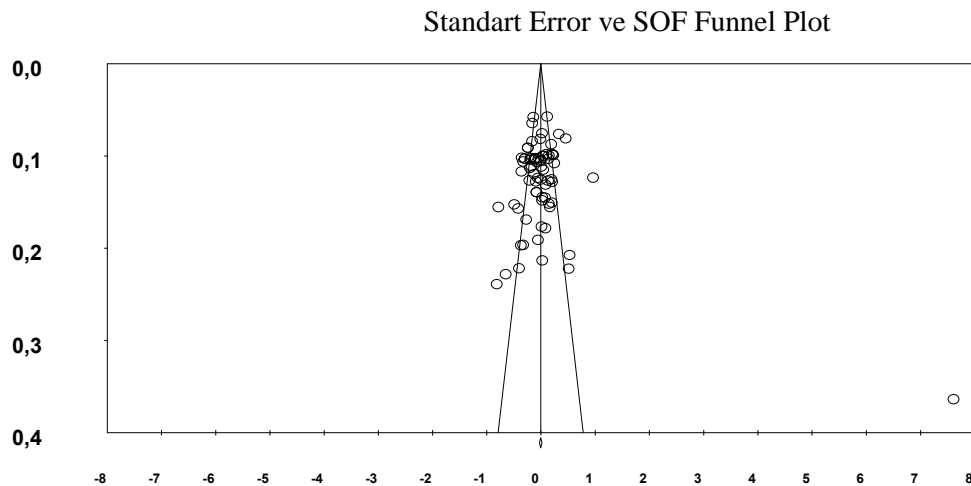


Figure 1. Funnel Plot of Effect Sizes (ES) of Studies on Gender Variable

As observed in Figure 1, it is seen that majority of 72 studies included in the research are towards the top of the figure and close to the united ES. In meta-analysis studies, if there is not publication bias, it symmetrically expands to the both sides of the vertical line indicating the combined ES. If there is a publication bias in 72 studies included in the study, then majority of the studies shall unite through the bottom part of the funnel shape or only at one part of the vertical line (Borenstein et al., 2009). This funnel scatter plot (Figure 1) is one of the indicators that there is not any publication bias for the studies included in the research. Other publication bias tests are given in Table 1.

Table 1. Publication Bias Test Results

Number of studies	Orwin N	Duval and Tweedie's Trim and fill method			Egger's Test
72	138 for 0.01	7	-0,05 (0,01)		P=0,37

As a second test in testing publication bias, Orwin's Fail-Safe N calculation was also carried out. Orwin's Fail-Safe N gives the number of studies which might be missing in a meta-analysis synthesis (Borenstein *et al.* 2009: 285). As a result of this analysis, Orwin's Fail-Safe N was calculated as 138. The necessary number of studies for 0.01 average, which was found as a result of meta-analysis, to reach 0.01 level of ES, in other words to almost zero effect level is 138. However, 72 studies in this study are the whole number of studies which were carried out for this research question in Turkey and were deemed appropriate for the inclusion criteria. Since there is not any possibility to have access to 138 studies apart from these 72 studies, the acquired results are considered another indicator of that there is not publication bias in this meta-analysis. According to trim and fill method of Duval and Tweedie, when 7 equal studies were included, it was observed that average ES which was found to be -0.05 as a result of the meta-analysis changed to 0.07. Since this change is insignificant, it can be accepted that the reported ES is reliable. As another publication bias test, Egger's test (funnel plot asymmetry test) results were not significant ($p=0.37$); and it is considered another indicator that there is not publication bias in this meta-analysis (Table 1).

Uncombined Findings of ES Analysis in Accordance with Teachers' Gender

Effect size values of AM that male and female teachers experienced at schools are given in Table 2.

Table 2. Effect Sizes of Teachers' Perception of Mobbing by Gender

Name of the Study	EB (d)	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value	Female	Male
Erçetin et al.,2008	-0,88	0,16	0,03	-1,20	-0,57	-5,48	0,00	78	93
Kaya,2014	-0,81	0,25	0,06	-1,30	-0,32	-3,27	0,00	110	20
Apak,2010	-0,72	0,23	0,05	-1,18	-0,26	-3,09	0,00	74	26
Akkar, 2010	-0,54	0,21	0,04	-0,94	-0,13	-2,58	0,01	40	60
Bucukler,2009	-0,49	0,15	0,02	-0,79	-0,19	-3,19	0,00	164	60
Alkan, 2011	-0,42	0,16	0,02	-0,72	-0,11	-2,65	0,01	128	61
Çivilidağ/Sar,2011	-0,40	0,22	0,05	-0,83	0,04	-1,79	0,07	26	98
Erdogan,2012	-0,37	0,20	0,04	-0,75	0,02	-1,85	0,06	55	50
Avcı,2015	-0,35	0,12	0,01	-0,58	-0,13	-3,03	0,00	185	124
Ekinci, 2012	-0,35	0,10	0,01	-0,55	-0,15	-3,46	0,00	175	220
Ekinci/Yıl,2015	-0,33	0,20	0,04	-0,71	0,06	-1,66	0,10	51	54
Şener,2014	-0,32	0,11	0,01	-0,53	-0,12	-3,05	0,00	225	150
Ocak, 2008	-0,29	0,10	0,01	-0,50	-0,09	-2,86	0,00	168	220
Ocak,2008	-0,29	0,10	0,01	-0,50	-0,09	-2,86	0,00	168	220
Ergüner,2014	-0,27	0,17	0,03	-0,60	0,07	-1,58	0,12	101	54
Uğurlu et al.,2012	-0,24	0,09	0,01	-0,42	-0,06	-2,59	0,01	263	223
Koç/Bulut,2009	-0,24	0,09	0,01	-0,42	-0,06	-2,59	0,01	263	223
Cengiz,2009	-0,23	0,10	0,01	-0,43	-0,04	-2,33	0,02	191	221
Ertürk, 2011	-0,23	0,10	0,01	-0,43	-0,04	-2,33	0,02	191	221
Ertürk, 2013	-0,21	0,10	0,01	-0,40	-0,02	-2,17	0,03	243	184
Bulut, 2007	-0,21	0,13	0,02	-0,45	0,04	-1,63	0,10	130	121
Comak, 2011	-0,20	0,11	0,01	-0,42	0,02	-1,74	0,08	160	154
Egerji,2009	-0,19	0,10	0,01	-0,39	0,02	-1,81	0,07	148	247
Aras,2012	-0,18	0,10	0,01	-0,38	0,02	-1,79	0,07	230	165
Emiroğlu,2011	-0,17	0,11	0,01	-0,39	0,05	-1,51	0,13	174	153
Erdemir,2013	-0,16	0,08	0,01	-0,32	0,01	-1,88	0,06	282	284
Sarıgöz et al.,2015	-0,16	0,06	0,00	-0,28	-0,03	-2,43	0,02	522	447
Mamadov, 2010	-0,15	0,15	0,02	-0,45	0,15	-1,00	0,32	63	140
Çomak/Tunç,2012	-0,15	0,10	0,01	-0,35	0,06	-1,41	0,16	184	193
Yıldırım, 2008	-0,13	0,06	0,00	-0,25	-0,02	-2,33	0,02	552	647
Aksahin, 2012	-0,12	0,10	0,01	-0,33	0,08	-1,20	0,23	148	248
Karakoç,2016	-0,12	0,12	0,01	-0,35	0,12	-0,98	0,33	165	121
Kılınç,2013	-0,11	0,10	0,01	-0,31	0,09	-1,05	0,29	201	181
Dılmac,2009	-0,09	0,10	0,01	-0,30	0,11	-0,89	0,37	158	227
Akpınar,2016	-0,09	0,13	0,02	-0,34	0,16	-0,70	0,48	136	112
Basar,2009	-0,08	0,14	0,02	-0,35	0,19	-0,56	0,57	83	136
Gülşen/Kılıç,2014	-0,08	0,14	0,02	-0,35	0,19	-0,56	0,57	83	136
Celik, 2011	-0,07	0,11	0,01	-0,28	0,14	-0,66	0,51	203	154
Çelik ,2010	-0,05	0,12	0,02	-0,30	0,19	-0,43	0,67	171	105
Sonmezsisik, 2012	-0,05	0,19	0,04	-0,43	0,32	-0,27	0,79	114	36
Arslan,2015	-0,04	0,10	0,01	-0,24	0,16	-0,39	0,70	201	181
Ehi, 2011	0,00	0,08	0,01	-0,16	0,16	-0,05	0,96	309	291
Gülcan,2015	0,00	0,13	0,02	-0,25	0,25	0,00	1,00	137	117
Kaya/Ahi,2012	0,00	0,11	0,01	-0,21	0,21	0,00	1,00	186	173
Mutlu,2013	0,00	0,10	0,01	-0,20	0,20	0,00	1,00	195	174
Ertürk/Cem,2013	0,01	0,11	0,01	-0,20	0,23	0,13	0,90	190	138
Gülle/Soyer,2016	0,02	0,18	0,03	-0,33	0,36	0,09	0,93	64	64

Yıldırım/Ek, 2014	0,02	0,08	0,01	-0,13	0,17	0,30	0,76	332	373
Onbas, 2007	0,03	0,15	0,02	-0,26	0,32	0,18	0,86	141	67
Hacıceferoğlu,2013	0,03	0,14	0,02	-0,25	0,32	0,21	0,83	78	122
Nanto, 2015	0,04	0,10	0,01	-0,16	0,23	0,37	0,71	196	204
Turhan,2014	0,04	0,10	0,01	-0,15	0,24	0,45	0,66	196	204
Yetimoğlu,2014	0,05	0,12	0,01	-0,18	0,27	0,39	0,69	198	122
Sadık, 2014	0,08	0,22	0,05	-0,35	0,51	0,36	0,72	120	25
Yıldırım,2010	0,08	0,15	0,02	-0,20	0,37	0,56	0,58	74	132
Celep,2012	0,09	0,18	0,03	-0,26	0,44	0,50	0,62	110	44
Eken,2014	0,09	0,13	0,02	-0,17	0,35	0,70	0,48	183	85
Gökçe,2012	0,10	0,10	0,01	-0,09	0,30	1,06	0,29	237	185
Yumusak,2013	0,12	0,06	0,00	0,01	0,23	2,06	0,04	573	639
Kaya et al.,2015	0,13	0,13	0,02	-0,11	0,38	1,06	0,29	88	213
Bölükbaşı,2015	0,15	0,10	0,01	-0,04	0,35	1,51	0,13	147	323
Karabacak,2014	0,17	0,16	0,02	-0,14	0,47	1,09	0,28	66	112
Bıçakçı,2017	0,20	0,09	0,01	0,02	0,37	2,24	0,03	228	310
Yüksel,2017	0,20	0,13	0,02	-0,05	0,45	1,59	0,11	121	135
Gökdağ, 2017	0,21	0,15	0,02	-0,09	0,50	1,37	0,17	108	75
Yılmaz,2017	0,21	0,13	0,02	-0,04	0,46	1,66	0,10	107	142
Ulukış,2017	0,25	0,11	0,01	0,04	0,46	2,33	0,02	215	145
Serin,2017	0,34	0,08	0,01	0,19	0,49	4,41	0,00	383	319
Peker,2018	0,46	0,08	0,01	0,30	0,62	5,69	0,00	300	324
Göçmen,2017	0,52	0,22	0,05	0,08	0,95	2,33	0,02	89	27
Ongun,2017	0,97	0,12	0,02	0,72	1,21	7,81	0,00	148	144
Emiroğlu,2017	7,69	0,38	0,15	6,94	8,44	20,13	0,00	115	115
Fixed Effects Model	-0,04	0,01	0,00	-0,07	-0,01	-3,04	0,00	12641	12313
Random Effects Model	-0,02	0,04	0,00	-0,11	0,06	-0,50	0,61	25204	24533

According to Table 2, it was observed in 72 studies that there is a low level of difference in favour of male teachers in the scope of ES. While statistically significant difference ($p < 0,05$) was found in 25 studies, no significant difference was found in 47 studies.

Forest Plot of Studies Which Include Data about Gender

Forest plot of 72 studies which were included in the study and had data about gender is demonstrated in Figure 2.

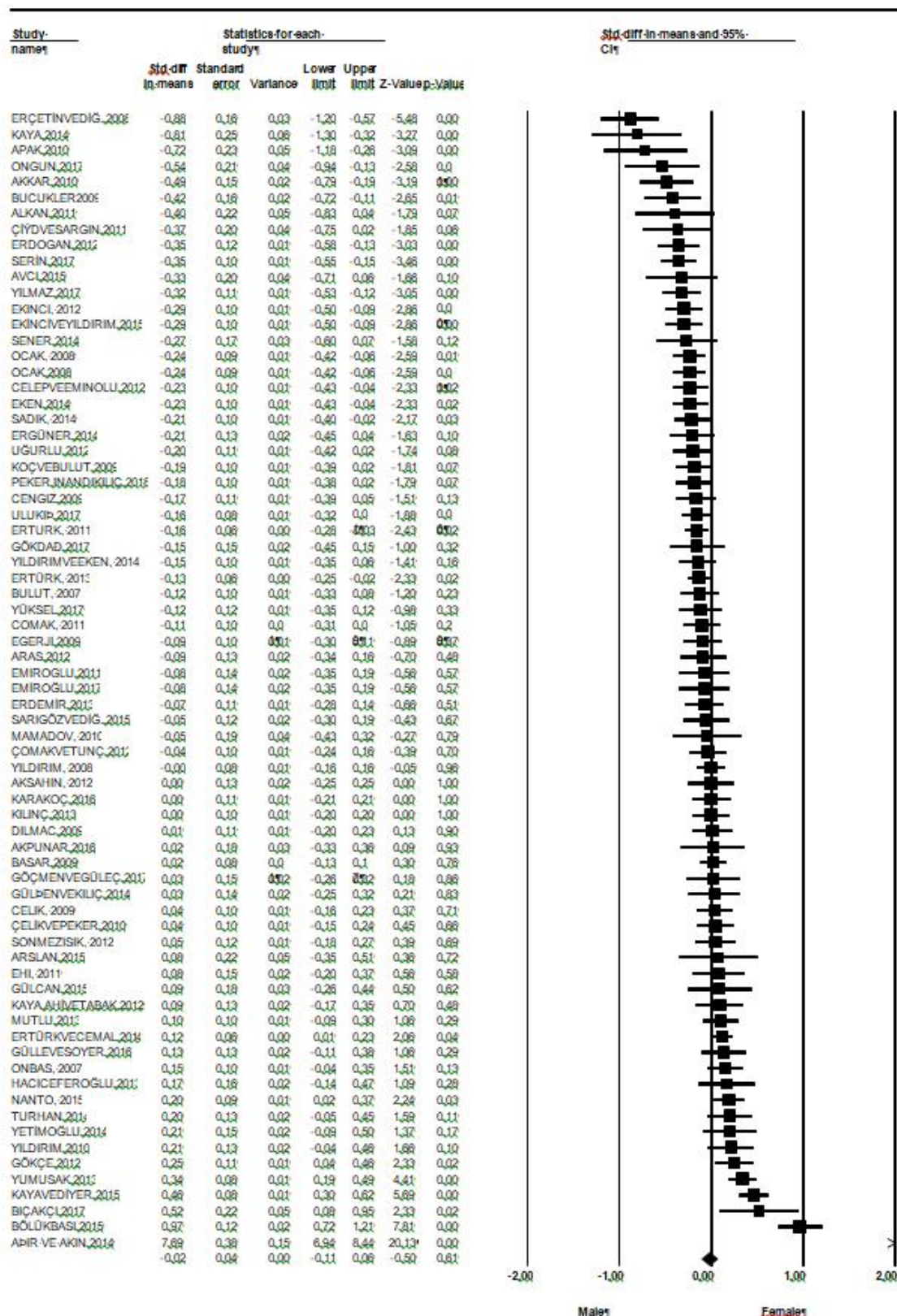


Figure 2. Forest Plot of Effect Sizes of Studies about Gender Variable

When Figure 2 is analysed, it is observed that there is a difference in favour of male teachers; it can be interpreted as such that they experience more AM at school compared to female teachers.

Combined Findings of ES Meta-Analysis of Teacher's Gender According to Fixed and Random Effects Model and Heterogeneity Test Results

ES values of AM that female and male teachers experienced at school are given in Table 3.

Table 3. Combined Findings of ES Meta-Analysis of Studies in Accordance with Fixed/Random Effects Model and Homogeneity Test

Model	Number of Studies	ES and 95% confidence interval			Heterogeneity				
		EB	SE	Variance	Lower limit	Upper limit	Z-value	Q-value	df (Q)
Fixed	72	-0,04	0,01	0,00	-0,06	-0,01	-3,04	744	72
Random	72	-0,02	0,04	0,00	-0,10	0,06	-0,50		

ES values of studies included in the research in accordance with the gender variable in Table 3 were calculated; its average ES value in accordance with random effects model was calculated as $d = -0,02$, standard deviation of average ES was calculated as $SE = 0,04$, upper limit of average ES's confidence interval was calculated as -0.10 , and the lower limit was calculated as 0.06 . In line with calculations, data in 72 studies which were included in meta-analysis revealed that according to random effects model, male teachers have more mobbing perception than female teachers. Since ES value was lower than 0.20 in this study, according to Cohen's (1998) classification, it was detected that it has a value which is even under the low level. Since ES is lower than 0.15 in Lipsey's classification, it was mentioned that ES is even under the low level. According to the classification carried out by Thalheimer and Cook (2002), $-0.15 < d < 0.15$ is insignificant, $0.15 < d < 0.40$ is low, $0.40 < d < 0.75$ is medium, $0.75 < d < 1.10$ is high, $1.10 < d < 1.45$ is very high, and $1.45 < d$ means perfect level of ES. According to this classification, it was observed that there is an insignificant level of difference ($-0.15 - 0,15$). When statistical significance was calculated in accordance with Z test, Z was found to be -0.50 ($Z = -0,50$).

Q was calculated as 744.02 ($Q = 744.02$) for homogeneity test, in other words, for Q-statistics. From χ^2 table, the level of 71 degrees of freedom was found to be 51.80 at 95% significance level. Since the Q-statistic value ($Q = 744.02$) exceeds the critical value of the chi-square distribution ($\chi^2_{0.95} = 51.80$) with the degree of freedom, the absence hypothesis of the distribution of effect sizes was rejected in the fixed effects model. It means that the distribution of effect sizes is heterogeneous according to the fixed effects model. Used in order to eliminate the lack of Q statistic from the sample, I^2 provides a clearer result regarding heterogeneity (Petticrew and Roberts, 2006). Since there is a high level of heterogeneity between studies as a result of homogeneity tests (Q and I^2) carried out for gender variable, moderator analyses were carried out to detect the possible reasons of this heterogeneity. Results of the moderator analysis carried out to detect the possible reasons of heterogeneity emerging in accordance with gender variable are given in Table 4.

Table 4. Categorical Moderator Results of Gender's Effect on Mobbing Perception

Moderator	k	d	SE	%95 CI	Q
Publishing Type					6,92
Master's Thesis	43	- 0,03	0,04	[-0,11; 0,04]	
Doctoral Thesis	3	- 0,13	0,04	[-0,21; -0,05]	
Article	26	0,18	0,10	[-0,02; 0,39]	
School Type					0,90
Public	63	0,02	0,04	[-0,06; 0,12]	
Public+Private	7	-0,11	0,12	[-0,36; 0,12]	
Private	2	0,29	0,18	[-0,05; 0,65]	

Level of Education					8,95
Pre-school					
Elementary	2	-0,36	0,42	[-1,19; 0,45]	
Secondary	39	0,01	0,01	[-0,03; 0,22]	
Elementary-Secondary	25	0,01	0,02	[-0,02; 0,06]	
	6	-0,17	0,04	[-0,26; 0,09]	
Region of Research					10,18
Mediterranean	8	-0,10	0,10	[-0,21; 0,18]	
Eastern Anatolia	5	0,07	0,07	[-0,08; 0,22]	
Aegean	4	-0,11	-0,12	[-0,36; 0,14]	
South Eastern	12	-0,04	0,06	[-0,17; 0,07]	
Central Anatolia	12	0,43	0,19	[0,04; 0,82]	
Black Sea	3	-0,18	0,15	[-0,49; 0,11]	
Marmara	25	0,00	0,06	[-0,16; 0,09]	
All regions	3	-0,03	0,12	[-0,12; 0,12]	
Gender of the Researcher					7,06
Male					
Female	33	-0,03	0,04	[-0,11; 0,04]	
Male/Female	30	0,14	0,09	[-0,03; 0,33]	
	9	-0,06	0,09	[-0,24; 0,12]	

NOT: k=number of studies, d= Cohen's d (SOF), SE=Standard Error CI=confidence interval, Q= heterogeneity between studies, Comparison analyses were performed for studies with 2 or more subgroups. * $p<.05$

As a result of the conducted moderator analysis, moderator effects of publishing type ($p=0,03$), of education level ($p=0,03$), and of gender of the researcher ($p=0,02$) were determined. It was observed that while mobbing perception of male teachers are higher in studies carried out in master's and doctoral theses, mobbing perception of female teachers are higher in studies carried out in articles. Moderator effects of school type (public, private, and public/private) ($p=0,63$) and of the region where the research was carried out ($p=0,17$) could not be determined. It was observed that mobbing perception of female teachers who work in Central Anatolia and Eastern Anatolia are higher compared to other regions.

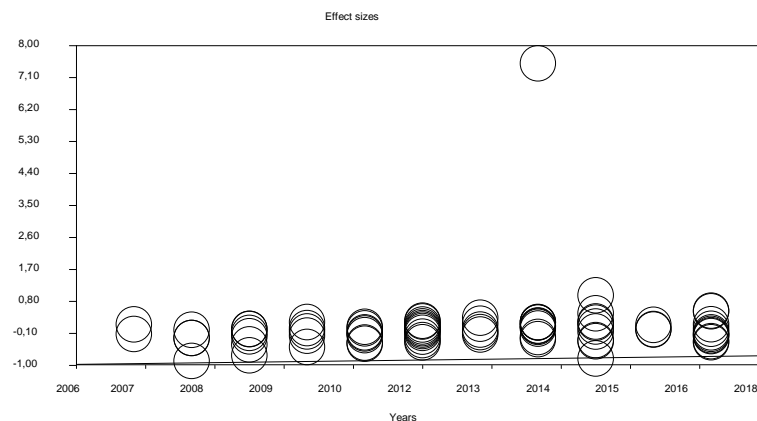


Figure 3. Meta-Regression Results of Effect Sizes by Years When Researches Carried out

As can be observed in Figure 3, it was observed that there was no significant difference in gender differences in terms of effect sizes of the studies.

DISCUSSION AND CONCLUSIONS

In this meta-analysis study, 72 ES from 72 studies which form a sample consisting of 24954 people were calculated. While statistically significant difference ($p<0,05$) was found in twenty five studies, no significant difference was found in 47 studies. As a result of the process of combining in

random effects model, a statistically significant ES which was at the level of -0.02 was found in favour of male teachers. According to Cohen (1988) and Thalheimer and Cook (2002) classifications, it is an insignificant and low level result. When results are evaluated together, it is observed that there is a difference, which may not be considered significant, between male and female teachers in terms of teachers' perceptions about AM at school. This result shows that the male teachers perception mobbing relatively more than female ones. However, this ES difference may not have practical significance for social scientists. Yet, when vote-counting method was applied (Borenstein et al., 2009; Ellis, 2012) more studies indicate parallel findings to this research. Taken the average age of the male teachers, it can be said that they take everything they experience serious, feeling mobbing more than female teachers. Since there is no meta-analysis study in the literature to determine the effect of gender roles in teachers' perceptions about AM they experience at school, it has not been possible to compare these results.

In generally female employees are expected to accept the rule of institution in comparison with patriarchal domination in the context of gender stereotype. This acceptance is based on cultural, biological, economic, and religious factors (Tan, 1979). According to the research conducted by Gökce (2012) in educational organizations, while age, type of school and branch do not create a meaningful difference in mobbing, gender does. The findings of this meta-analysis study support this interpretation. It is also significant that the difference of opinion between male and female teachers is low.

Although some studies revealed different results in terms of gender, acts of mobbing are experienced in every organization and culture (Ülbeği and Yalçın 2015). In some studies carried out in Turkey which were analysed within the scope of the research, for example, the results of the studies carried out by Aras (2012), Aydın (2009), Çelik (2011), Deniz and Ünsal (2010), Dilmaç (2009), and Ertürk (2015) revealed that there is not a significant difference between females and males in terms of experiencing acts of mobbing. Since there is a low level of difference between primary and secondary grade teachers' opinions about mobbing in the studies carried out by Nielsen and Einarsen (2012) and Russo, Milić, Knežević, and Mulić and Mustajbegović (2008), they support the results of this study. In this meta-analysis study, low significant difference has been found in the comparison with the gender variable. Deniz and Unsal (2010); Hansen, Hogh, Persson, Karlson, Garde, and Orbaek (2006) and Rayner (1997) did not find any difference in the gender variable. In other words, Bıçakcı (2017) found that male teachers faced mobbing behavior more than female teachers. It is significant in the context of the results of this study that since male employees are more likely to aspire to career ladders at schools, especially managers apply more AM to male employees for various reasons (Apak, 2009; Ocak, 2008). Mobbing has negatively affected everyone in educational organizations especially at schools regardless of any gender difference (Nielsen and Einarsen 2012). Despite the general perception that gender roles in Turkey reflect on teachers' perception of mobbing in school organization, this meta-analysis study revealed that there is a low level of difference. The fact that there is a low level of difference between female and male teachers in terms of mobbing perception can be considered as an interesting result for the Turkish Education System. Female teachers' tendency to obey the rules can reduce their level of exposure to mobbing. The fact that the majority of school administrators are male can be considered as a factor in low teachers' perception of mobbing. Within the context of this study, it can be stated that mobbing perception at schools cannot be explained within the scope of gender variable or that this perception is at a low level. In this context, it could be suggested not to use teachers gender as an independent variable in studies on mobbing at school.

Within the scope of the results of this meta-analysis study, apart from the gender variable of teachers, meta-analysis studies can be carried out by using variables which are related to working conditions, school culture, and organizational behaviour elements which are predictors of AM.

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Factors Affecting Teacher Candidates' Value Preferences

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Abstract

Since the beginning, humankind accumulated knowledge and experiences by passing them to new generations. This accumulation within societies emerged as these societies' values. We acquire these values from our societies and we hold them up as examples in our lives. To ensure the country's future, educational institutions and teachers have to teach these values.

The study purpose is to determine whether teacher candidates' value preferences differ or not. Relational survey model was employed in the study. The sex of the candidates, education level of the parents, income level of the family, where they live and the program they are in make up the independent variables. Human value dimensions (power, achievement, hedonism, self-direction, stimulation, universalism, benevolence, tradition, conformity and security) of the candidates make up the dependent variables of the study. The study universe consists of seniors attending Omer Halisdemir University's Faculty of Education during the 2016-2017 academic year. Selected by random sampling method among this universe, 380 senior teacher candidates make up the study group.

The study results put forth that values education has effect on female candidates' universalism, benevolence and security value tendencies, and their value tendencies are high. Also, the higher the mother's education level, the higher the candidates' universalism, hedonism, benevolence and security value tendencies. Yet, father's education level does not have any effect on candidates' value tendencies. The study, also, reveals that teacher candidates' family income and where they live have no effect on value tendencies. Furthermore, the programs the candidates are in have effect on their universalism, hedonism, benevolence and security value tendencies.

Keywords: Teacher Candidates, Values Education, Schwartz Value Survey

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INTRODUCTION

Since the beginning, humankind accumulated knowledge and experiences by passing them to new generations, and this accumulation within the societies emerged as the societies' values. Value as a concept is defined as something that is wanted and needed but at the same time something that is necessary. Moreover, values are not entirely objective; they form completeness with emotions when they come to the fore. In other words, values are not ideas devoid of emotions. Values are effective in the behaviors of individuals while they are trying to achieve their goals (Cetin, 2004). Values are patterns of social behaviors ensuring individuals' place in society and making their lives easier (Ozkan, 2010, p.1128). Values become a whole with its information, emotion and behavior dimensions. Although societies and individuals have different values, values share common characteristics in terms of structure, logic and function (Yesil & Aydin, 2007, p. 80; Gomleksiz & Curo, 2011, p. 97).

We acquire these values from our societies and we hold them up as examples in our lives. Therefore, values are gained from the family, surroundings, and written and visual materials through imitation, modeling or reading (Sen, 2008, p. 764-765). For this reason, individuals become aware of certain values, create new ones, adopt them and show them with their behaviors through education. This education is called values education (Yesil & Aydin, 2007, p. 71). Today, values education is given in a systematic order within a program in educational institutions (Sen, 2008, p. 764-765). Preparing individuals for life and teaching citizenship skills and values are done through curricula. This function is realized by certain subjects in every course and courses like Life Sciences, Social Studies, Citizenship and Human Rights (Akengin, Saglam & Dilek, 2002, p. 3). A person whose values are not matured or developed enough can hurt people around himself (Doganay, 2006, p. 257). For this reason, values education has an important place in the education system. The fundamental purpose of families, societies and schools is to raise individuals who adopted basic human values. In this respect, the general purpose of schools is to raise individuals who are academically successful and who adopted basic values (Eksi, 2003, p. 79). Moreover, values education has an important part in protecting and development of national identity. People grow mature by the development of values and attitudes that they have to have through values education. The most important characteristics of values education are these (Kale, 2007, p. 319), to make people aware of universal and cultural values and their importance, to associate democratic attitudes with tolerance, to evaluate all values with human existence and developing opportunities, and to transform information to reality or reality to information through concrete problems related to ethical problems (Gomleksiz & Curo, 2011, p. 99-100).

Values are general principles reflecting on people's way of life. In social life, everything is perceived according to values, and people use values' different approaches and applications as criteria (Kincal, 2002; Genc & Eryaman, 2008). In sociology, common thoughts of healthy adults, their habits and conditioned emotional reactions are universal. What individuals understand from universal is not the universalism of good and bad separately but good and bad as a whole. For example, we can call love, war and death universal or we can make explanations about the situations created by these words. In this way, what we understand from universalism will reveal itself (Koc, 2007). When universal values are considered in terms of benefit to humankind, acting in a way that would be beneficial to people or acting in a way that would not be harmful to them is possible with ethical values, love respect trust, tolerance, etc. Universal processes are expression of social rules that do not need to be defined other than general understanding. A society does not necessarily go through its phases because they should be universal but they go through them as principles of understanding offered by experiences. Being a part of experiences that are shared from past to present, actions that are believed to be universal are products of the social system representing people's general understandings. Nobody has the initiative to create the framework for universal rules. Social accumulations that have universal characteristics are identified by comparing different cultures and finding common aspects. When Rousseau (1992) stated that people have natural rights before the state and above its laws, he meant that these values are above the law. If there are no values addressing all human beings, there will be a world full of wars and anarchy (Somuncu, 2008, s. 25-27).

In his Kohlberg Moral principles, German developmental psychologist Kohlberg states that people have tendencies for universal moral principles during their moral development stages. Universal moral principles are Kohlberg's sixth stage. In this stage, right and wrong is defined by people's own conscious. These principles are universal moral principles like justice, human rights and respect for others (Yapici & Yapici, 2005). Universal moral principles make up people's moral judgments in this stage. Gander calls these moral principles universal justice principles and ranks them as equality of human rights and respect for people's honor as individual beings. Finally, characteristics of universal moral values can be ranked as follows: "Universal moral values are put forth and recommended by a superhuman entity-God. They are the values that emerge in the actions of people making sure they live with dignity, listen to their conscious and enables them not to be alienated to themselves. They are in the interest of humankind and help the society. In order for personal integrity to have meaning, universal values should live in the society's culture. Creating the future is only possible with living with the values and keeping them alive because power coming from values does not oppress people, lower human dignity and instead rise human dignity (Cuceloglu, 1999). In order to bring peace and justice to world and protect it, people should develop a common consensus and cooperate. This is possible with universal values being taught in schools. According to Plato, education is to bring out the truths hidden in the student. According to rationalists, education is to educate the mind on mental problems and past solutions with applications and intellectual habits. According to Russell, education is formation of certain mental habits through training and is a certain outlook to life and world.

According to Dewey, education is an attempt to fulfill the conditions that make people grow regardless of age. According to Rousseau, education's purpose is to make the child happy and good. Since everything in nature is corrupted by people, education should be in harmony with nature. Children should not learn from books, but from nature and experience. Education should be versatile and comprehensive to bring out the child's hidden potential (Inal, 1998; Eryaman & Riedler 2009). According to Montaigne, education not corrupting people is not enough; it should change people for the better (Montaigne, 1580; Somuncu, 2008). Having a society with good values is greatly important for the future of a country. Educational institutions and teachers that will give these values are needed to create this society. School education is vital in giving these values. Today, values education is given great importance, and there are studies on how to transmit these values to children. In schools, a social environment, values are developed with the reactions and interpretations children receive from their environment for their behaviors and attitudes. The social fabric formed in the classroom provides a ground for the development of their values. Teachers help the development of children's value systems with positive and negative feedback by giving them responsibilities. Today's events led many parents and educators to believe that academic achievement alone is not enough for children and information is not enough for achievement. What is more important is for children to make good life choices, to be self-confident to express themselves, to be honest, to never stray away from what is right. These values, today, became priceless, and researchers began to work on these issues (Aydin, 2010). Values include individuals' experiences, and have a great effect on organizing relationships with other people. Therefore, in values education stress the importance of evaluating individuals' lives and experiences with ethical values like love, respect, honesty, trust, independence and truth (Kale, 2007: 319; Gomleksiz & Curo, 2011, p. 101).

When considered individually, values emerge as a criterion in an individual's thoughts, attitudes, behaviors and structures, and indissolubly constitute a part of social holism (Durmus, 1996). Values are also a part of the culture of the organizations where the individuals work because organization culture is defined as values that are shared and obeyed by the individuals and groups in an institution (Sabuncuoglu & Tuz, 2003). At the same time, values are considered as one of the most important keys to understand workers' behaviors in an organization (Demir, 2005). Workers' human values create a powerful organization culture and workplace. Also, in an organization where human values are dominant, workers' psychology is better understood. This helps workers to reach their potential and be more successful. Finally, in an organization with human values, people give more importance to each other's emotions (Stallard & Pankau, 2008). Individuals live in environments made up of their and environments' values (Turan & Aktan, 2008). Individuals can change their values with

interaction. During this process, individuals' school life is very important because values are mostly learned in schools. School is a learning place built on values (Turan & Turan, 2008). School curricula have objectives regarding values. Especially in the new curricula, objectives regarding values and how to teach them are given great importance (MEB, 2004; Yilmaz, 2009).

The main purpose of education programs is to raise effective citizens and individuals who know their responsibilities. In addition to this, affective characteristics including individual's emotions are also very important in education. In education, attaining positive or negative emotions towards certain objects or events and transmitting values and attitudes wanted by the society are related to affective objectives. The education done to reach these objectives is affective education. Affective education is also called moral education, character education and value education (Bacanli, 2006, p. 13-14). Great responsibility falls on teachers for socialization of children and for them to live in society appreciating democratic values (Gomleksiz & Curo, 2011, p. 1001-1002). Teachers play an important role in values education, planned or unplanned. In addition to teaching the subject matter, teachers influence children's cognitive, affective and social development (Akbas, 2009, p. 404). Teachers' own value judgements have a significant impact on students. Thus, values education should not be only theoretical but also should be practical (Tozlu & Topsakal, 2007, p. 181; Gomleksiz & Curo, 2011, p. 100).

In training teachers who will teach values education, great responsibility falls on the shoulders of faculty members in education faculties. Teacher candidates should be taught values along with subject matter because teachers play significant part in realizing educational objectives and bringing natural talents into the open (Jackson, Boostrom & Hansen, 1998; Riedler & Eryaman, 2016). Teachers' values are especially important because of their position. Their roles are not just related to teaching they do in classroom. Their role encompasses the entire school. For this, teachers should see students as individuals and should value them. Teachers should strive for the highest level of learning and development by taking students' social and cultural differences and their interests into consideration. They also should have the personal characteristics they want their students to have in themselves because there are many study findings showing how teachers' values affect student behaviors (Brophy & Good, 1986; Dickinson, 1990). Because of their position, teachers have an important role in the process of teaching values to the students (Suh & Traiger, 1999; Yilmaz, 2009). Taking all these assumptions into consideration, determining and explaining values of teacher candidates who will become the future teachers is quite important.

The purpose of the present study is to determine whether teacher candidates' value preferences differ or not according to sex of the candidates, education level of the parents, income level of the family, where they live and the program they are in.

METHOD

The study purpose, model, universe and sample, data collection tools and statistical methods used to analyze the data collected are presented in this section.

Study Purpose

The purpose of this study is to put forth the value tendencies of 380 seniors attending Nigde Omer Halisdemir University's Faculty of Education during the 2016-2017 academic year in terms of certain variables (sex, education levels of their parents, income levels of their family, where they live and programs they are in).

Study Model

The study employed relational survey model, a subtype of general survey model. Relational survey model aims to determine the co-changing between two or more variables and establish the

degree of change (Karasar, 2009). The sex of the teacher candidates, education level of the parents, income level of the family, where they live and the program they are in make up the independent variables. Human value dimensions of the teacher candidates make up the dependent variables of the study. In the study, human values of the teacher candidates were examined to determine whether they differed or not according to their sex, education levels of their parents, income levels of their family, where they live and programs they are in.

Study Group

The sample universe of the study is made up of seniors attending Nigde Omer Halisdemir University's Faculty of Education. Since the teacher candidates in the Faculty of Education have similar characteristics, random sampling method was used. Selected by random sampling method among this universe, 380 senior teacher candidates from the programs of Social Studies, Turkish, Math, Science, Primary, Guidance and Psychological Counseling, Painting and Music make up the study group.

Value		Frequency	Percent
Sex	Female	254	66,8
	Male	126	33,2
Department	Math	49	12,9
	Social Studies	56	14,7
	Science	39	10,3
	Turkish	53	13,9
	Primary	50	13,2
	Guidance Counseling	46	12,1
	Painting	42	11,1
	Music	45	11,8

Data Collection Tools

In the study, a personal information form was used to collect teacher candidates' demographic information. Schwartz Value Survey was administered to measure teacher candidates' value preferences in their lives. The survey was adapted to Turkish by Kuşdil and Kağıtçıbaşı in 2000, and their version was administered to teacher candidates in the present study. This survey was administered during the fall semester of 2015-2016 academic year.

Schwartz Value Survey

Schwartz Value Survey consists of 57 value items. Respondents rate the importance of each of these 57 items "as a guiding principle in my life" on a scale varying from 1 (opposed to my values) to 7 (of supreme importance). The 57 value were grouped under 10 sub-dimensions. These sub-dimensions are power, achievement, hedonism, self-direction, stimulation, universalism, benevolence, tradition, conformity and security. Reliability coefficients of value dimensions was calculated by Ercan (2009) and Kusdil and Kagitcibasi (2000). The reliability coefficients for value dimensions range from 0.51 to 0.77.

The value dimensions and values used in the study are power (having social power, controlling others, dominance), universalism (equality, internal harmony, wanted a peaceful world, harmony with nature, being), achievement (being ambitious, being influential, being intelligent, being successful), hedonism (taking pleasure from life, gratification), stimulation (being brave, living ever-changing life, having an exciting life), self-direction (being creative, being independent, choosing your own goals, being free, being respectful to yourself), benevolence (spiritual life, being forgiving, being honest, being benevolent, being loyal, being responsible, meaningful life, real friendship, mature love), tradition (accepting what life gives, being genial, being religious, beings respectful of

traditions), conformity (being obedient, cherishing parents and elders, being polite, controlling yourself) and security (loyalty, social justice, family security, wanting the social order to continue, national security, being clean, being healthy)

Data Analysis

Before data analysis, assumptions of normality and homogeneity of variance were tested to check whether the assumptions were met or not. To determine whether the assumption of normality was met, skewness and kurtosis coefficients regarding the distribution of scores from each sub-dimension were examined, and these coefficients were determined to be between -1 and +1 limits. According to these results, the scores did not show any significant deviation from the normal deviation (Buyukozturk, 2009; Kalayci, 2010). Puanlara ilişkin çarpıklık ve basıklık katsayıları Tablo... Da verilmiştir.

Table... Descriptive Statistics Regarding Scores

Values	Mean	Std. Deviation	Skewness	Kurtosis
Power	22,96	7,15	-,448	-,068
Universalism	51,31	8,76	,921	,615
Achievement	20,69	5,57	-,774	,602
Hhedonism	10,53	2,77	-,644	-,142
Stimulation	13,08	5,09	-,349	-,534
Öself-direction	35,03	6,17	-,683	,817
Benevolence	51,65	8,69	-,974	,950
Tradition	22,50	6,28	-,429	-,015
Confirmity	19,97	5,01	-,810	,968
Security	41,07	6,59	-,854	,975

Then, assumptions of homogeneity of variance were tested. Levene F test was used to test the assumption of homogeneity of variance. According to Levene F test, variances of scores from each sub-dimension were not equal for each group (Buyukozturk, 2009). Since these assumptions were met, Independent Samples t Test was used to determine whether there was a significant difference according to the sex variable, and ANOVA was used to determine whether there were significant difference according to mother's education level, place to live and program variables. Since teacher candidate numbers in some groups were small, Kruskal Wallis test was used to determine whether there was a significant difference between the education level of father variable and income level of family variable. The eta-square value, also called effect size, is a measure of the magnitude of the relationship between the dependent variable and the independent variable (Mertler & Vannatta, 2005). η^2 , which shows the independent variable's explanation amount of the total variance in the dependent variable, varies between 0.00 and 1.00, and η^2 values at .01, .06 and .14 levels are interpreted as "small", "medium" and "large" effect sizes in the same order (Büyüköztürk, 2009). The data was analyzed using SPSS 18.0 statistical package program. In the analysis of data, significance level (p) was accepted as 0.05.

FINDINGS

This section of the study includes findings obtained from the statistical analysis done based on the study purposes and interpretations of these findings. Whether the difference between the value dimensions score averages was significant according to teacher candidates' sex variables was test with Independent Samples t Test, and the results are presented in the following table 1.

Table 1. Independent Samples t Test Results According to Sex Variable

Value	Sex	N	\bar{X}	Sx	t	Df	p	η^2
Power	female	254	23.38	6.91	1.629	378	.104	0.017
	male	126	22.11	7.55				
Universalism	female	254	52.11	7.79	2.525	378	.012*	0.017
	male	126	49.71	10.27				
Achievement	Female	254	20.77	5.46	.343	378	.732	
	male	126	20.56	5.80				
Hedonism	female	254	10.66	2.61	1.314	378	.190	
	male	126	10.26	3.04				
Stimulation	female	254	12.88	5.09	-1.086	378	.278	
	male	126	13.48	5.07				
Self-direction	female	254	35.43	5.26	1.801	378	.072	
	male	126	34.22	7.62				
Benevolence	female	254	52.74	7.77	3.532	378	.000*	0.032
	male	126	49.44	9.96				
Tradition	female	254	22.73	6.18	1.023	378	.307	
	male	126	22.03	6.47				
Conformity	female	254	20.28	4.56	1.738	378	.083	
	male	126	19.33	5.76				
Security	female	254	41.55	5.58	2.008	378	.045*	0.011
	male	126	40.11	8.19				

*p<0.05

When Table 1 is examined, it is found that there are no significant differences between power, achievement, hedonism, stimulation, self-direction, tradition and conformity according to the sex ($p>0.05$). This finding shows that sex does not have effect on teacher candidates' power, achievement, hedonism, stimulation, self-direction, tradition and conformity value tendencies.

According to Table 1, there are significant differences in favor of female teacher candidates between universalism, benevolence and security value types ($p<0.05$). These findings indicate that sex has effect on teacher candidates' universalism, benevolence and security value tendencies, and these value tendencies of female teacher candidates' are higher than the males. The eta-square effect size value was between 0.011 and 0.032. This finding shows that sex has a "low level" effect on universalism, benevolence and security scores.

Whether there is a significant difference between value dimensions score averages according to teacher candidates' mother's education level or not is tested with ANOVA and the results are presented in Table 2.

Table 2. ANOVA Results According to Mother's Education Level

Value	Mother's Education	N	\bar{X}	Sx	F	Df	p	Significant Difference	η^2
Power	Illiterate	43	21.95	6.87	.436	379	.783		
	Primary school	208	22.91	7.18					
	Middle school	57	23.47	6.81					
	High school	50	22.92	7.02					
	University	22	24.14	8.73					
Universalism	Illiterate	43	48.58	10.32	2.625	379	.034*	illiterate-middle school illiterate-university high school-university	0.027
	Primary school	208	51.31	8.58					
	Middle school	57	53.02	6.96					
	High school	50	50.26	9.73					
	University	22	54.68	7.46					
Achievement	Illiterate	43	20.56	5.31	.278	379	.892		
	Primary school	208	20.60	5.69					
	Middle school	57	20.75	5.20					
	High school	50	21.40	6.13					
	University	22	20.14	4.76					

Hedonism	Illiterate	43	9.98	2.93	3.260	379	.012*	illiterate-university primary school- university middle school-university high school-university	0.008
	Primary school	208	10.44	2.79					
	Middle school	57	10.86	2.59					
	High school	50	10.18	2.78					
	University	22	12.32	1.80					
Stimulation	Illiterate	43	12.77	4.30	1.661	379	.158		
	Primary school	208	12.74	5.08					
	Middle school	57	13.95	4.71					
	High school	50	12.88	5.84					
	University	22	15.18	5.29					
Self- Direction	Illiterate	43	34.07	6.82	1.153	379	.331		
	Primary school	208	34.97	6.20					
	Middle school	57	35.46	5.74					
	High school	50	34.60	6.62					
	University	22	37.32	3.84					
Benevolence	Illiterate	43	49.21	10.41	2.645	379	.033*	illiterate-primary school illiterate-middle school primary school-high school middle school- high school	0.027
	Primary school	208	52.21	8.26					
	Middle school	57	52.91	7.05					
	High school	50	49.18	9.97					
	University	22	53.41	8.44					
Tradition	Illiterate	43	20.91	6.60	1.181	379	.319		
	Primary school	208	22.92	6.36					
	Middle school	57	22.81	5.13					
	High school	50	21.68	6.79					
	University	22	22.68	6.23					
Confirmity	Illiterate	43	18.14	5.82	1.642	379	.163		
	Primary school	208	20.17	5.08					
	Middle school	57	20.35	4.54					
	High school	50	20.12	4.45					
	University	22	20.27	4.60					
Security	Illiterate	43	38.14	8.97	2.754	379	.028*	Illiterate-primary school Illiterate-middle school Illiterate-university	0.029
	Primary school	208	41.53	6.22					
	Middle school	57	41.26	5.42					
	High school	50	40.80	6.97					
	University	22	42.59	5.16					

*p<0.05

When Table 2 is examined, it is found that there are no significant differences between power, achievement, stimulation, self-direction, tradition and conformity according to mother's education level ($p>0,05$). This finding shows that mother's education level does not have effect on teacher candidates' power, achievement, stimulation, self-direction, tradition and conformity value tendencies.

Table 2 shows that universalism value tendencies of teacher candidates significantly differ in favor of female teacher candidates ($p<0,05$). According to the results of LSD test, one of the multiple comparison tests, universalism value tendencies of teacher candidates whose mothers graduated from university are significantly higher than universalism value tendencies of teacher candidates whose mothers are illiterate or graduated from high school. Furthermore, universalism value tendencies of teacher candidates whose mothers graduated from middle school are significantly higher compared to teacher candidates whose mothers are illiterate. Eta-square effect size value was found to be 0.027. This finding shows that mother's education level has a "low level" effect on universalism scores.

When Table 2 is examined, it is seen that hedonism value tendencies of teacher candidates significantly differ according to mother's education level ($p<0,05$). When average scores are examined, it is found that as the education level of the family increases, the teacher candidates' hedonism value tendency scores increase. According to the results of LSD test, hedonism value tendencies of teacher candidates whose mothers graduated from university are significantly higher compared to mothers who are illiterate or who graduated from primary school, middle school and high school. Eta-square effect size value was found to be 0.008. This finding shows that mother's education level has a "low level" effect on hedonism scores.

Teacher candidates significantly differ according to mother's education level ($p < 0,05$). According to the results of LSD test, benevolence value tendencies of teacher candidates whose mothers graduated from primary school and middle school are significantly higher compared to mothers who are illiterate or who graduated from high school. Eta-square effect size value was found to be 0.027. This finding shows that mother's education level has a "low level" effect on benevolence scores.

Table 2 also shows that security value tendencies of teacher candidates significantly differ according to mother's education level ($p < 0,05$). When average scores are examined, it is found that as the education level of the family increases, the teacher candidates' security value tendency scores increase. According to the results of LSD test, security value tendencies of teacher candidates whose mothers graduated from primary school, middle school and university are significantly higher compared to mothers who are illiterate. Eta-square effect size value was found to be 0.029. This finding shows that mother's education level has a "low level" effect on security scores.

Since teacher candidate numbers in some groups were small, Kruskal Wallis test was used to determine whether there was a significant difference between value dimensions score averages according to the education level of teacher candidates' father, and the results are presented in Table 3.

Table 3. Krukal Wallis Test Results According to Father's Education Level

Value	Father's Education	N	\bar{X}	Sx	χ^2	Df	P
Power	Illiterate	12	22.33	8.18	.480	5	.993
	Primary school	154	22.80	7.08			
	Middle school	63	22.92	7.06			
	High school	84	23.14	6.90			
	University	64	23.06	7.78			
	graduate school	2	26.00	7.07			
Universalism	Illiterate	12	51.83	8.98	3.409	5	.637
	Primary school	154	50.67	9.14			
	Middle school	63	51.60	9.48			
	High school	84	52.30	8.20			
	University	64	52.64	7.87			
	graduate school	2	57.00	2.82			
Achievement	Illiterate	12	20.00	6.09	1.886	5	.865
	Primary school	154	20.69	5.68			
	Middle school	63	20.71	5.76			
	High school	84	20.96	5.72			
	University	64	20.34	4.98			
	graduate school	2	24.00	4.24			
Hedonism	Illiterate	12	9.92	3.34	2.775	5	.742
	Primary school	154	10.40	2.75			
	Middle school	63	10.41	3.11			
	High school	84	10.61	2.56			
	University	64	10.91	2.62			
	graduate school	2	12.50	.70			
Stimulation	Illiterate	12	13.67	5.19	5.042	5	.414
	Primary school	154	12.71	4.98			
	Middle school	63	12.98	5.00			
	High school	84	13.11	5.35			
	University	64	13.73	5.15			
	graduate school	2	18.50	.70			
Self-Direction	Illiterate	12	36.17	4.26	1.360	5	.929
	Primary school	154	34.84	6.26			
	Middle school	63	35.24	6.81			
	High school	84	35.04	6.20			
	University	64	34.95	5.76			
	graduate school	2	38.50	2.12			

Benevolence	Illiterate	12	49.83	6.97	4.350	5	.500
	Primary school	154	51.80	8.48			
	Middle school	63	52.24	10.28			
	High school	84	50.93	8.58			
	University	64	51.92	8.16			
	graduate school	2	57.00	1.41			
Tradition	Illiterate	12	24.83	5.32	2.310	5	.805
	Primary school	154	22.60	5.87			
	Middle school	63	22.27	6.92			
	High school	84	22.08	6.92			
	University	64	22.73	6.05			
	graduate school	2	20.00	2.82			
Confirmity	Illiterate	12	19.67	5.71	1.872	5	.867
	Primary school	154	19.79	5.53			
	Middle school	63	20.35	4.96			
	High school	84	20.08	4.60			
	University	64	19.84	4.24			
	graduate school	2	23.00	1.41			

When Table 3 is examined, it is found that there are no significant differences between power, universalism, achievement, hedonism, stimulation, self-direction, benevolence, tradition, conformity and security according to father's education level of teacher candidates ($p>0,05$). This finding shows that father's education level does not have effect on teacher candidates' value tendencies.

Since teacher candidate numbers in some groups were small, Kruskal Wallis test was used to determine whether there was a significant difference between value dimensions score averages according to the family income level of teacher candidates, and the results are presented in Table 4.

Table 4. Krukal Wallis Test Results According to Family Income Level

Value	Family Income	N	\bar{x}	Sx	χ^2	Df	P
Power	0-1500	153	23,16	6,63	3.128	4	.537
	1501-3000	151	23,40	7,04			
	3001-4500	57	21,37	8,13			
	4501-6000	10	23,00	6,49			
	6000 above	9	22,22	11,11			
Universalism	0-1500	153	50,33	9,06	4.457	4	.348
	1501-3000	151	52,36	7,90			
	3001-4500	57	51,47	9,97			
	4501-6000	10	49,10	8,84			
	6000 above	9	51,78	8,28			
achievement	0-1500	153	20,95	5,38	1.361	4	.851
	1501-3000	151	20,66	5,63			
	3001-4500	57	20,26	6,13			
	4501-6000	10	19,20	5,47			
	6000 above	9	21,22	4,68			
Hedonism	0-1500	153	10.66	2.75	2.736	4	.603
	1501-3000	151	10.44	2.68			
	3001-4500	57	10.60	3.02			
	4501-6000	10	9.40	2.87			
	6000 above	9	10.56	2.78			
Stimulation	0-1500	153	12.83	4.53	2.374	4	.667
	1501-3000	151	13.39	5.38			
	3001-4500	57	12.97	5.61			
	4501-6000	10	12.10	5.36			
	6000 above	9	14.00	5.85			
Self-direction	0-1500	153	34.95	6.17	5.935	4	.204
	1501-3000	151	35.36	5.66			
	3001-4500	57	34.58	7.28			
	4501-6000	10	31.20	7.42			
	6000 above	9	37.89	3.51			

Benevolence	0-1500	153	52.05	8.86	4.109	.392
	1501-3000	151	51.89	7.53		
	3001-4500	57	50.48	10.94		
	4501-6000	10	47.80	8.85		
	6000 above	9	52.56	7.68		
Tradition	0-1500	153	22.92	5.82	2.008	.734
	1501-3000	151	22.60	6.44		
	3001-4500	57	21.30	7.09		
	4501-6000	10	21.90	6.91		
	6000 above	9	22.00	4.97		
Conformity	0-1500	153	20.12	5.40	2.220	.695
	1501-3000	151	20.04	4.63		
	3001-4500	57	19.53	5.17		
	4501-6000	10	18.70	4.80		
	6000 above	9	20.33	3.53		
Security	0-1500	153	41.30	6.67	2.021	.732
	1501-3000	151	41.09	5.91		
	3001-4500	57	40.77	7.75		
	4501-6000	10	38.00	9.40		
	6000 above	9	42.22	4.40		

When Table 4 is examined, it is found that there are no significant differences between power, universalism, achievement, hedonism, stimulation, self-direction, benevolence, tradition, conformity and security according to family income level of teacher candidates ($p>0,05$). This finding shows that family's income level does not have effect on teacher candidates' value tendencies.

ANOVA was used to determine whether there was a significant difference between value dimensions score averages according to where the teacher candidates live, and the results are presented in Table 5.

Table 5. ANOVA Results According to Where the Teacher Candidates Live

Value	Where They Live	N	\bar{X}	Sx	F	Df	P
Power	City	196	23.15	7.37	.115	379	.952
	District	92	22.86	7.58			
	Town	32	22.69	5.76			
	Village	60	22.62	6.50			
Universalism	City	196	52.24	8.42	1.793	379	.148
	District	92	50.87	8.89			
	Town	32	49.28	9.46			
	Village	60	50.07	9.04			
Achievement	City	196	20.82	5.45	.135	379	.939
	District	92	20.38	6.24			
	Town	32	20.66	4.59			
	Village	60	20.80	5.43			
Hedonism	City	196	10.68	2.79	1.084	379	.356
	District	92	10.43	2.58			
	Town	32	10.81	2.76			
	Village	60	10.00	2.93			
Stimulation	City	196	13.33	5.28	.637	379	.592
	District	92	12.75	4.89			
	Town	32	12.19	5.59			
	Village	60	13.25	4.44			
Self-direction	City	196	35.49	5.72	.928	379	.427
	District	92	34.45	6.52			
	Town	32	35.28	6.17			
	Village	60	34.30	6.96			
Benevolence	City	196	52.13	8.73	.551	379	.648
	District	92	50.91	8.77			
	Town	32	50.69	8.36			
	Village	60	51.70	8.67			

Tradition	City	196	21.91	6.70	1.287	379	.278
	District	92	23.36	5.93			
	Town	32	22.78	5.37			
	Village	60	22.97	5.73			
Conformity	City	196	20.16	4.71	.238	379	.870
	District	92	19.65	5.34			
	Town	32	20.00	5.63			
	Village	60	19.80	5.14			
Security	City	196	41.36	6.98	.301	379	.824
	District	92	40.64	5.71			
	Town	32	40.63	5.92			
	Village	60	41.03	6.94			

When Table 5 is examined, it is found that there are no significant differences between power, universalism, achievement, hedonism, stimulation, self-direction, benevolence, tradition, conformity and security according to where the teacher candidates live ($p>0,05$). This finding shows that the place where the teacher candidates live does not have effect on teacher candidates' value tendencies.

ANOVA was used to determine whether there was a significant difference between value dimensions score averages according to the programs the teacher candidates are in, and the results are presented in Table 6.

Table 6. ANOVA Results According to the Programs

Value	Program	N	\bar{x}	Sx	F	Df	p	Significant Difference	η^2
Power	Math	49	23.18	6.98	.741	379	.638		
	Social Studies	56	23.00	6.53					
	Science	39	22.05	9.35					
	Turkish	53	24.11	6.19					
	Primary	50	22.44	6.66					
	Guidance Counseling	46	21.87	6.30					
	Painting	42	24.36	7.19					
	Music	45	22.47	8.28					
Universalism	Math	49	50.78	9.81	.720	379	.655		
	Social Studies	56	49.84	11.82					
	Science	39	50.21	9.88					
	Turkish	53	52.40	6.91					
	Primary	50	51.02	5.50					
	Guidance Counseling	46	51.44	6.33					
	Painting	42	52.10	8.56					
	Music	45	52.89	9.39					
Achievement	Math	49	19.47	5.52	2.728	379	.009*	Math-Turkish Math-Primary Social-Painting Turkish-Painting Primary-Painting	0.020
	Social Studies	56	20.98	5.08					
	Science	39	20.44	6.07					
	Turkish	53	22.45	4.68					
	Primary	50	22.10	4.33					
	Guidance Counseling	46	20.61	5.21					
	Painting	42	18.36	6.25					
	Music	45	20.53	6.76					
Hedonism	Math	49	10.35	2.83	2.136	379	.039*	Social-Science Science-Turkish Science-Primary Turkish-Counseling Primary-Counseling Turkish-Music Primary-Music	0.039
	Social Studies	56	10.23	3.16					
	Science	39	11.46	2.41					
	Turkish	53	9.89	2.57					
	Primary	50	9.92	2.98					
	Guidance Counseling	46	11.04	2.05					
	Painting	42	10.52	2.66					
	Music	45	11.18	2.89					

Stimulation	Math	49	13.08	4.82	1.160	379	.325
	Social Studies	56	13.13	4.72			
	Science	39	12.13	6.46			
	Turkish	53	13.66	5.25			
	Primary	50	13.30	3.83			
	Guidance Counseling	46	12.26	5.33			
	Painting	42	12.26	5.41			
	Music	45	14.53	4.85			
Self-direction	Math	49	33.88	7.65	1.309	379	.245
	Social Studies	56	34.09	7.15			
	Science	39	35.69	5.54			
	Turkish	53	37.00	2.72			
	Primary	50	34.96	4.01			
	Guidance Counseling	46	35.20	5.99			
	Painting	42	34.71	6.64			
	Music	45	34.76	7.79			
Benevolence	Math	49	49.96	11.67	.617	379	.742
	Social Studies	56	51.61	10.82			
	Science	39	50.44	8.35			
	Turkish	53	52.13	5.00			
	Primary	50	51.44	6.94			
	Guidance Counseling	46	52.74	6.59			
	Painting	42	52.05	8.45			
	Music	45	52.76	9.66			
Tradition	Math	49	22.55	7.07	1.181	379	.312
	Social Studies	56	22.07	7.16			
	Science	39	20.15	5.98			
	Turkish	53	22.25	7.28			
	Primary	50	23.46	4.17			
	Guidance Counseling	46	23.30	4.43			
	Painting	42	23.10	6.53			
	Music	45	22.87	6.38			
Conformity	Math	49	19.43	5.75	.503	379	.833
	Social Studies	56	19.32	5.99			
	Science	39	19.80	4.45			
	Turkish	53	20.40	4.31			
	Primary	50	20.30	4.59			
	Guidance Counseling	46	19.70	5.12			
	Painting	42	20.07	4.78			
	Music	45	20.80	4.72			
Security	Math	49	40.43	8.33	.695	379	.676
	Social Studies	56	40.79	8.62			
	Science	39	42.05	5.68			
	Turkish	53	42.38	4.68			
	Primary	50	40.34	5.87			
	Guidance Counseling	46	41.13	4.39			
	Painting	42	40.21	5.47			
	Music	45	41.29	7.77			

*p<0.05

When Table 6 is examined, it is found that there are no significant differences between power, universalism, stimulation, self-direction, benevolence, tradition, conformity and security according to the programs the teacher candidates are in ($p>0.05$). This finding shows that the program the teacher candidates are in does not have effect on teacher candidates' power, universalism, stimulation, self-direction, benevolence, tradition, conformity and security value tendencies.

When Table 6 is examined, it is seen that achievement value tendencies of teacher candidates significantly differ according to the program they are in ($p < 0,05$). According to the results of LSD test, achievement value tendencies of teacher candidates in Math Education are significantly lower compared to teacher candidates in Primary Education and Turkish Education. Also, achievement value tendencies of teacher candidates in Painting Education are found significantly lower compared to teacher candidates in Primary Education, Social Studies Education and Turkish Education. Eta-square effect size value was found to be 0.020. This finding shows that department has a “low level” effect on achievement scores.

According to Table 6, hedonism value tendencies of teacher candidates significantly differ according to the programs they are in ($p < 0,05$). The results of LSD test show that hedonism value tendencies of teacher candidates in Science Education are significantly higher compared to teacher candidates in Primary Education, Social Studies Education and Turkish Education. Furthermore, hedonism value tendencies of teacher candidates in Guidance and Psychological Counseling and Music Education are found significantly higher compared to teacher candidates in Primary Education and Turkish Education. Eta-square effect size value was found to be 0.039. This finding shows that department has a “low level” effect on hedonism scores.

DISCUSSION AND RESULTS

Conducted with 4th grade teacher candidates, this study put forth that sex does not have effect on teacher candidates’ power, achievement, hedonism, stimulation, self-direction, tradition and conformity value tendencies. This finding shows that sex has an effect on teacher candidates’ universalism, benevolence and security value tendencies, and these values are higher in female teacher candidates. In a similar study, Yilmaz (2009) stated that score averages of female teacher candidates’ universalism, benevolence, conformity and security dimensions are significantly higher than score averages of male teachers. Also, in the study conducted by Mehmedoglu (2006), score averages of universalism and security dimensions of females were found higher than the males. Similarly, Coskun and Yildirim (2009) found that female university students’ value levels are higher than the male students. These studies support the present study’s findings. In Turkish culture, characteristics related to women are expressed more in interpersonal relationships. The basic tasks expected from women are for them to be emotional, to cooperate and to show care and interest. On the contrary, men are expected to be independent, to represent the family and to be competitive (Temel & Aksoy, 2001). The way women are raised and what is expected from them by the society can make them to prefer universalism, benevolence, conformity and security values more than the men. Women look at their surroundings with compassion, mercy and love (Yapici & Zengin, 2003). According to Oguz’s (2012) study findings, there is a positive relationship between self-direction, universalism and security value types and sex. Female teacher candidates stated positive opinions on all these value types. A similar result was put forth by Altunay and Yalcinkaya (2011). When teacher candidates’ values are compared according to sex, it is seen that females give more importance to all the values compared to male teacher candidates. Also, both females and males adopt the tradition value the highest (Altunay & Yalcinkaya, 2011). According to Basciftci, Gulec, Akdogan and Koc (2011), while teacher candidates’ value preferences do not show any difference in power, achievement, stimulation, self-direction, tradition and security sub-dimensions based on sex, they show difference in hedonism, universalism, benevolence, conformity, ability and effort sub-dimensions (Oguz, 2012). Female characteristics like being peaceful, virtuous, forgiving, loyal, obedient, kind, clean and respectful to elders can make them prefer values like universalism, benevolence, conformity and security more than the males. Different results were found in some studies conducted on teachers’ value levels. For example, in Dilmac, Bozgeyikli and Cikili’s (2008) study on teacher candidates, males’ score averages are higher than females in the universalism dimension. In studies done by Sari (2005) and Cileli and Tezer (1998), males’ value scores are higher than female in all value dimensions (Yilmaz, 2009).

The study results show that mother’s education level has no effect on the power, achievement, stimulation, self-direction, tradition and conformity value tendencies. In multiple comparison tests, universalism value tendencies of teacher candidates whose mothers graduated from university are

found significantly higher than universalism value tendencies of teacher candidates whose mothers are illiterate or graduated from high school. Furthermore, universalism value tendencies of teacher candidates whose mothers graduated from middle school are found to significantly higher compared to teacher candidates whose mothers are illiterate. The results, also, show that hedonism value tendencies of teacher candidates whose mothers graduated from university are significantly higher compared to mothers who are illiterate or who graduated from primary school, middle school and high school. Benevolence value tendencies of teacher candidates whose mothers graduated from primary school and middle school are found significantly higher compared to mothers who are illiterate or who graduated from high school. In addition, security value tendencies of teacher candidates whose mothers graduated from primary school, middle school and university are found significantly higher compared to mothers who are illiterate. However, father's education level has no effect on teacher candidates' value tendencies. The society gives more roles to the mothers in raising their children. Mothers have great effect on their children's value judgments because in our society, fathers take on the roles outside the house and mothers become the main actors in the development of children. When the Kruskal Wallis test results according to father's education level in Table 3 is examined, it is found that there are no significant differences between power, universalism, achievement, hedonism, stimulation, self-direction, benevolence, tradition, conformity and security value types according to father's education level of teacher candidates. This finding shows that father's education level does not have effect on teacher candidates' value tendencies. Traditionally, tasks and responsibilities are shared in the family according to gender. In a traditional family, while men do tasks like repairs and garden work, women do tasks like cooking, washing and cleaning (Safak, Copur, Ozkan, 2006; Gunay ve Bener, 2011). According to Jan R. M. Gerris et al (1997), family values and goals shape what is precious and wanted for a child's future and beliefs whether these values and goals come from social structure or from socio-cultural interaction. These beliefs and cultural values can be considered as mental formations given by the parents and through these families are considered to play important roles in their children's lives. Based on this, it can be accepted that families' effect on individuals' value structuring is quite high (Coskun & Yildirim, 2009).

The present study determined that family income level has no effect on teacher candidates' value tendencies. This indicates that the society has certain value judgements and income level does not affect these.

According to another result of the study, the places teacher candidates live has no effect on their value tendencies. It can be concluded that the social structure has a certain value structure and where they live has no effect on teacher candidates' value judgements. While value judgments changed according to education level of the parents, it did not change according to where they live. The value judgements of teacher candidates from the cities and from rural areas show no difference, indicating the importance of traditions, language and religious unity over the places they live in. Coskun and Yildirim (2009) found no significant difference in value levels according to where the participants lived, and stated that there is no difference between village and city because the society shows a homogeneous structure in terms of values. This result is similar to the present study. However, this can be limited to the values stated in the study.

The present study, also, reveals that the programs the teacher candidates are in have no effect on their power, universalism, stimulation, self-direction, benevolence, tradition, conformity and security value tendencies. However, there is a difference between the programs in terms of power, universalism, stimulation, self-direction, benevolence, tradition, conformity and security values. For example, while science education program got the highest value in the power value tendency, social studies program got the highest value in the universalism value. According to the study findings, achievement value tendencies of teacher candidates in Math Education are found significantly lower compared to teacher candidates in Primary Education and Turkish Education. Also, achievement value tendencies of teacher candidates in Painting Education are found significantly lower compared to teacher candidates in Primary Education, Social Studies Education and Turkish Education. Since candidates in Painting Education give more importance to artistic tendencies, they value art more than achievement.

According the LSD test result, one of the multiple comparison tests, hedonism value tendencies of teacher candidates in Science Education are found significantly higher compared to teacher candidates in Primary Education, Social Studies Education and Turkish Education. Furthermore, hedonism value tendencies of teacher candidates in Guidance and Psychological Counseling and Music Education are found significantly higher compared to teacher candidates in Primary Education and Turkish Education. The Life Sciences course taught in primary schools becomes Social Studies in middle school. While values education is given under the heading of personal qualities in the primary curriculum, it is seen as values in the 2015 curriculum. As a result of this, it can be said that values education is included in Social Studies. To be able to teach values education, the teachers should improve themselves in this area. On the other hand, since primary teachers have to teach social studies as life sciences in primary schools, they have to have the same attitude as the social studies teachers. When Turkish teachers are taken into consideration, Turkish courses are about language teaching but also about cultural values. Since the Turkish teachers are aware of this, they have high scores in values compared to other teaching programs. The reason why science teacher candidates' scores are higher is because science related courses are taught in Life Science course in primary schools but taught as a separate course in middle schools just like Social Studies.

The reason why hedonism value scores of teacher candidates in Guidance and Psychological Counseling are higher than candidates in Primary Education and Turkish Education can be attributed to the importance they give on human psychology. Even listening to a person is part of values education. Teacher candidates in Guidance and Psychological Counseling have a different outlook on life and focus on human lives. These are the reasons why their hedonism values are higher. The reason why teacher candidates in Music Education got higher hedonism scores than the candidates in other programs can be attributed to music's transference from the past to present, its cultural functionality and its secret communication between people. Hedonism is part of music culture, and teacher candidates studying in Music Education have more hedonistic values and prefer this program in line with their abilities. According to Oguz (2012), there is a positive relationship between the programs the teacher candidates are in and their power, stimulation, benevolence, tradition, conformity and security value types. Compared to teacher candidates in other programs, teacher candidates in Science Education gave more positive statements in all the value types. According to study findings, there is a negative relationship between the stimulation, universalism and conformity value types and the grades the candidates are in (Oguz, 2012). Although the study done by Oguz (2012) does not show similar results with the present study, they are similar in the sense that teacher candidates in different programs have different statements on values education.

SUGGESTIONS

In this study, different values were put forth through the survey conducted different programs of Omer Halisdemir University's Faculty of Education. This shows that different values will be put forth in different universities' programs.

Therefore, education programs should be reorganized in a way that values are really taught. Values can be given with different activities in Service Learning courses. In education faculties, there should be courses on affective domain in general and values education in specific. The meaning and teaching of values should be taught to the prospective teachers.

From the high benevolence and security scores of female candidates, it can be concluded that they are generally more emotional than the male candidates.

While mother's education level has an effect on teacher candidates' value tendencies, father's education level does not. Mother's education affects child rearing but father's education does not affect . Therefore, more emphasis should be given to mothers' education and women's education in general as a country. There are not enough courses on values in the programs of education faculties. For example, while values education is included in Social Studies, it is only given in culture and major

area courses. In Primary Teaching values education is given in history, Turkish and geography courses. However, there are no courses that include values education in Math, Science, Music and Painting. For all teacher candidates to be equipped in this area, education faculties should offer courses on values education.

Values education can best be given through the family members and educational institutions. Values education starts within the family when the child is born, and it helps the development of child's character in every aspect. Thus, children should be taught about what is right and what is wrong, and a solid foundation be given to them. It is necessary to raise children with good morals and children who have positive attitudes about the future.

Rather than giving importance to value classifications in values education, large-scale studies should be conducted to determine the needs of the society, country and individuals, and values education should be given more importance. Values classifications should be reorganized according to our own social structure and present conditions. The works related to this can be done by setting up a special research commission with the Ministry of National Education. Today, no matter how excellent an educational institution is and no matter how well teachers know their subjects, this is not enough. Teachers need to have human values. They should be able to teach values in addition to their subjects.

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“Teaching is like taking a trip”: Two Cases of Pre-service Teachers’ Early Construction of Professional Identity with Disparate Outcomes

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Abstract

The purpose of this study was to explore two sophomore pre-service teachers’ processes of professional orientation in the same teacher education program in the US with emphasis on their identity construction. The pre-services teachers were asked to reflect on their “identity” and articulate “who they are” as becoming teachers in semi-structured interviews and narrative writing about their metaphors for teaching. Using a narrative inquiry approach, their identity construction process was first examined in light of their life experiences prior to entering the teacher education program, including childhood experiences, early teacher role models, previous teaching experiences, and important people or experiences that affected their choice of a teaching career. Initial findings reveal that the same pre-service teacher education program had a different impact on each student teacher. Their previous life experiences, their early beliefs about teaching, their initial motivations, and their experiences in their teacher education program all influenced their adaptation to the teaching profession.

Keywords: teacher identity, pre-service teachers, elementary, teacher preparation

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INTRODUCTION

In schools across the US, teachers are viewed the most important school-related factor influencing students' academic achievement (Johnson, Kraft, & Papay, 2012) and social and emotional development (Jennings & Greenberg, 2009). The qualities teachers bring into a classroom affect their teaching skills, practices, interactions with students, and directly influencing their students' performance (Santoro, 2011). Underlying the importance of teacher quality, Feimen-Nemser (2001) pointed out that:

After decades of school reform, a consensus is building that the qualities of our nation's schools depend on the quality of our nation's teachers. Policy makers and educators are coming to see that what students learn is directly related to what and how teachers teach; and what and how teachers teach depends on the knowledge, skills and commitments they bring to the their teaching. (p. 1013)

Due to the critical impact of teachers on the intellectual, emotional and social development of children, recruiting and retaining the most qualified teachers have become primary goals of school policies at local, state, and national levels in the US. (Kraft & Papay, 2014). Among the factors influencing teachers' quality is how they develop their professional identity, a process that begins at least as early as their entry into teacher education programs. Building upon insights of Pillen, Beijaard, and den brook (2013), Avraamidou (2014) emphasizes the importance of teachers' identity construction as it can serve as a resource for teachers in making sense of themselves as well as a useful analytic lens for gaining a better understanding of teacher learning and development. According to Sachs (2005):

Teacher professional identity then stands at the core of the teaching profession. It provides a framework for teachers to construct their own ideas of "how to be," "how to act" and "how to understand" their work and their place in society (p.15).

Accordingly, this study explores the professional adaptation process of two pre-service teachers' in a teacher education program in the US with emphasis on their identity construction. Research questions of this study are: (1) How do life histories of pre-service teachers impact their sense of identity? (2) To what extent experiences during teacher education program shape their sense of identity? In exploring these research questions a case study was conducted using narrative inquiry approach.

Framing Identity

Danielewicz (2001) refers to the notion of identity as "our understanding of who we are and who we think other people are" (p.10), which has been a subject of particular interest in the field of teacher education. Researchers examining identity construction must deal with its complex nature. Identity has been described by Beijaard, Meijer and Verloop (2004) as "not a fixed attribute of a person but a relational phenomenon" (p. 108), by Beauchamp and Thomas (2009) as "multifaceted and dynamic" (p.177), and by Rodgers and Scott (2008) as "dependent upon and formed within multiple contexts" (p.733). As these characterizations show, researchers conceptualize identity in different ways but agree that it is not static but always developing within particular contexts.

Thus, an important part of learning to become a teacher is the process of developing a professional identity development. Highlighting the importance of teachers' identity development, Carter and Doyle (1996) state that "the process of learning to teach, the act of teaching, and teachers' experiences and choices are deeply personal matters inexorably linked to their identity (p.120). As prospective teachers' point of entry into their profession, teacher education programs have the important of understanding and guiding their identity development (Schaefer & Clandinin, 2019).

Prospective teachers' identity formation has both personal and contextual dimensions. Referring to its complexity, Sumara and Luce-Kapler (1996) stated that "Beginning teachers must negotiate at least three teaching identities: those they bring with them into teacher education, those they develop while doing university course work and those they develop during student teaching practicums" (p.65). Thus, forming professional teacher identity actually begins before prospective teachers enter their teacher education programs. Referring to Britzman's (1986) idea of "natural teachers," (p.451), Sugrue (1997) argues that some prospective teachers have a "teaching personality," (p.217) meaning that they possess personal skills that are important for effective teaching and make them well suited to the profession. In addition to personality, identity formation of prospective teachers is significantly shaped by cultural contexts such as family, apprenticeship of observation, and atypical teaching episodes (Sugrue, 1997). Prospective teachers therefore enter teacher education programs with pre-set beliefs about teaching and images of "good" and "bad" teachers based upon their own past schooling experiences (Riedler & Eryaman, 2019). They may also have had informal teaching experiences such as helping younger siblings with homework or guiding children while baby-sitting. Pre-service teachers' personal biographies (Britzman, 2003), especially their past school lives including past teachers, instill both positive and negative images (Richardson, 1996) that influence how they approach the teaching profession. As Britzman explains,

Prospective teachers, then, bring to their teacher education more than their desire to teach. They bring their implicit institutional biographies- the cumulative experience of school lives-which in turn inform their knowledge of the student's world, of school structure, and of curriculum (Eryaman, 2007). All this contributes to well-worn and commonsensical images of the teacher's work and serves as the frame of reference for prospective teachers' self-images (Britzman, 1986, p.443).

It is likely that their school experiences have had particular impact on pre-teachers' choice of teaching as a career. With these as their initial framework, their experiences in their teacher preparation programs are the next primary influences on the construct their professional teaching identity as they take courses, experience field placements, and form collegial relationship with peers, all of which constitute their socialization into teaching. As prospective teachers move through the stages of their teacher education programs, their teacher identities are under construction, shifting over time and open to renewal.

Beijaard et al. (2004) observes that this dynamic process involves continually revisiting two questions: "Who am I at this moment?" and "Who do I want to become?" (p.122) In other words, professional identity is an ongoing meaning- making and interpretive process that never ends throughout a teacher's career. Accordingly, researchers have used a variety of open-ended research methods to understand teacher identity, such as semi-structured interviews and discourse analysis of teachers' metaphors and narratives, which encourage teachers to reflect on themselves and their work as teachers.

Research Design

As an investigation of a particular phenomenon, the role of their cumulative life experiences on pre-service teachers' construction of their teaching identities, this study is framed as a case study using a narrative inquiry approach (Schaefer & Clandinin, 2019). Great emphasis has been placed on biographies and narratives and personal stories to understand teacher identity. Because biographies are histories of individuals, the terms biography and life history are used interchangeably (Knowles and Holt-Reynolds (1991), both referring to how a participant tells his or her story. According to Knowles (1992) examining how pre-teachers share their story have reached their present position as becoming teachers is important for understanding their teaching identity formation because their cumulative life experiences up to the present filter what they learn in their teacher preparation programs and how they view teaching. In exploring life histories, it is important to evaluate early childhood experiences, images of past teachers, previous formal and informal teaching experiences, and important people and events (Knowles, 1992). Accordingly, in this study a full range of participants' life experiences prior

to entering their teacher education program was elicited focusing on all these factors, followed by exploration of their current beliefs and feelings about teaching.

Goodson and Sikes (2001) identify the following instruments for collecting data in life history research: (1) conducting conversational interviews; (2) conducting interactive group interviews; (3) having participants construct time-lines; (4) examining participants' journals, diaries and other personal writings; and (5) consulting other documents relevant to participants. The main purpose behind these approaches is to collect participants' personal stories and both their written and their oral reflections on their life experiences. As a popular instrument in life history research, interviewing offers the benefit of allowing researchers to document the voices of interviewees in their own words. According to Patton (2002), "nothing can substitute for these data: the actual things said by real people. That's the prize sought by the qualitative inquirer" (p. 380). Keeping all these claims in mind, I used open-ended interviews with participants, which enabled me to understand both their past and their current experiences, and to delve deeply into their lives. I conducted and audio-recorded two individual face-to-face interviews with each participant at a time and place of the interviewee's choosing. The average length of each interview was around one hour.

The second instrument was narrative writing about metaphors for teaching. Metaphors have been widely used to explore professional identity. Sugrue (1997) suggests that student teachers' metaphors for teaching emerge from both their apprenticeship of observation (Lortie, 1975) and the culture in which they grew up. In this regard, Thomas and Beauchamp (2011) have explained metaphor as "another way of saying who you are, using an object or a role to represent the way you see yourself as a teacher" (p.764), which captures its value in teacher education research. Sugrue (1997) notes that "Student teachers' metaphors serve to illuminate their teaching identities and provide them with additional ballast when dealing with the vicissitudes of life in classroom" (p.218). In light of these claims, participants in this study were asked to write a narrative in which they explained their metaphors for teaching.

Context of the Study and Participants' Backgrounds

The setting for the study was a Midwestern university in the US. The two participants purposefully selected for this case study were both female pre-service teachers in their sophomore year of a four-year teacher education program, a critical juncture at which students decide whether to persist in teacher education. These particular individuals were chosen because they represented cases of contrasting identity construction in terms of their life histories and their approaches to teaching. To protect their privacy, they have been given the pseudonyms Kate and Nancy. At the time of the study, Nancy had decided to change her major and leave the teacher education program after finishing her sophomore year. Kate, on the other hand, was committed to completing the program and pursuing a teaching career. Each participant is briefly profiled below.

Table1. Background of participants

Name	Age	Family Background
Kate	19	Kate was born into a middle-class family in Chicago, the second of five children, and spent much of her childhood there. Kate's parents were college educated, and her mother was a homemaker.
Nancy	20	Nancy was born and spent her childhood years in China and had been in the US since she was in high school. She is the only child in her family. Her parents were college educated.

Initially, Kate had decided not to go to college because she wanted to become a homemaker like her mother. However, her experiences while working in a boarding school for two years after graduating from high school influenced her, as she explained: "I saw there what a difference you can make in young students' lives by your attitudes of encouragement, motivation... that really inspired me." She started the teacher education program at the university shortly after her residence at boarding school, her greatest wish being to make a difference in children's lives.

Nancy's parents, and grandparents were all former teachers and she is the only child in her family. When she experienced difficulty in choosing a career after high school, her parents encouraged her to pursue teaching.

FINDINGS

School experiences

Kate had diverse learning experiences in various schooling contexts, including homeschooling, private Catholic schools, and a Catholic boarding school, so she had internalized Catholic values. She had no public school experiences. Kate's reflections on her various learning experiences reveal how they helped shape her teaching identity. When I asked her in which school she learned most, she said her homeschooling experiences influenced her learning more than those in other educational contexts because of the amount of support and encouragement her homeschool teachers gave her and her high levels of achievement, especially in math. Then, she went on to claim that each school added something to her personal life. For instance, in boarding school she learned to get along well with people and to be a disciplined person who managed her time efficiently. Overall, she identified herself as a student who was neither lazy nor zealous. As Kate reported in her interview, she also had some negative experiences in these different school settings, which also influenced her student identity, such as her fear of a teacher, which made her resent her student status:

When I was younger, I hated being a student and being at school. I do not know why, but one of my computer teachers in elementary school scared me a lot, so every Thursday, when I had computer class, I did not want to go school.

In addition to her student experiences at various schools, Kate's volunteering experiences also affected her professional identity. As a volunteer, she led a Catholic girls club and taught theology to the group; she also voluntarily worked in her siblings' schools. These experiences taught her that teachers can change children's lives.

Nancy was educated in private schools in China until she started high school in the US. According to her, she was quite relaxed as a student who did not care much about grades or learning lessons. After listening to Nancy's story of her student years, I inferred that her family had made a larger impact on her than her schools. In particular, her grandparents, who were former teachers, gave her much support and encouragement. In her words "[t]hey did not like acting like teachers but they acted as mentors." Her grandfather, about whom she said, "every time I asked questions over and over again he was very patient with me," influenced her in developing the idea that teachers should be very patient and kind to their students.

Nancy graduated from a private Catholic High school in the US. During her time there, she stayed with host families and got along with them quite well, which eased her transition from Chinese culture to American culture. Describing her experiences in high school, she said, "[i]n high school I learned to treat things more positively, and I also feel like I became a more open person. When I was in China, I would be very nervous even while answering one question".

Nancy's comments suggested how context mattered in the development of her personality. She compared Chinese and U.S. social contexts and their influence on her identity. "Before I came to America, I felt ... nervous about school, exams, and grades. Here, I regard them very peacefully instead of becoming angry". Factors influencing her optimism might be related to her teachers' attitudes. She believed that American teachers were more patient and positive than Chinese teachers:

The biggest difference between Chinese and American teachers is that teachers here are very patient. When students ask questions over and over again, they answer over and over again. But in China, some teachers do not have such patience. When students ask stupid questions, they could be really nervous.

It can be said that Nancy's experiences were more positive in US schools than in Chinese schools.

Images of “good” and “bad” teacher

Kate's image of a good teacher was based on her high school math teacher. When asked about the character of that teacher, she explained “She made us laugh, did like very comic, funny things. I enjoyed going to math. Even though she was a hard teacher her sense of humor made math fun.” Similarly, Nancy referred to her favorite teacher in middle school, also a math teacher, as her image of a good teacher, explaining that

[s]he gave me a lot of support, encouraged me a lot. She was funny, the way she taught ... she was always using like drama, jokes. She let us warm up to the class. I was really enjoying class instead of just wasting time and sitting there.

After this description, she added that “I think teachers need to be funny, be patient and should give support to students.”

Both Kate's and Nancy's comments about the salient characteristics of good teachers suggest that pre-service teachers have constructed their image of good teachers by observing their own teachers, and in particular their favorite teachers. For instance, Nancy's experiences with her grandfather teaching her math shaped her belief that teachers should be patient. Her relationship with her math teacher in the middle school adds the further value teachers should make learning fun.

Negative images of previous teachers also shaped the pre-service teachers' professional identity. Both Nancy and Kate talked about the personalities of teachers they had strongly disliked, such as Kate's technology teacher when she was in elementary school, who yelled at students and insulted them in class. She said the behavior of that teacher dampened her interest in learning about technology.

Nancy also entered her teacher education program with negative images of a particular teacher. When she was in China, one of her math teachers told her family that he would give up on Nancy due to her failures in math. After she shared this experience, she reported that “the first requirement to be a teacher is to learn patience. Instead of telling families that their children are failures, they should give more time to students in order to ensure their success”. Her experience with this math teacher confirmed her belief that teachers should be patient and more supportive.

After they had discussed their positive and negative images of past teachers, I asked them about their current beliefs about the characteristics of a good teacher. Kate replied that

[t]hey genuinely care about their students, they make learning interesting and have a good sense of humor; they use their own personality and you can tell who they are as persons.... They make children accountable for their work, so they are strict but loving at the same time.

Nancy considered a good teacher as one who “encourages students with patience and communicates well with parents”.

The characteristics of good teachers that Kate and Nancy shared were that teachers should be caring persons who make lessons fun. Their images of a good teacher, which were shaped by their previous experiences with teachers, were still under construction and changing continually. Every new experience might contribute to their image of a good teacher.

Different motivations for teaching

Pre-service teachers' motivation for entering their programs is an important factor in their retention in teacher education. Kate's and Nancy's statements revealed that their past experiences influenced their motivation to enter into the teaching profession. Kate's volunteer teaching experiences, especially those in a boarding school, influenced her profoundly when she saw that the teachers there were able to change the lives of children and to help them grow into conscientious citizens. She commented that:

I like to see all the challenges present at the beginning of the year, and then to see the growth of students at the end of the year.... It's amazing just seeing all the fruits and all the good things that come from them... it is so worth the difficulties that arise throughout the year, you get to that end and you see how much they grew... In some ways you feel like you are being rewarded. Seeing how what you did helped them to grow as a person is wonderful.

Her experiences in the past led her to develop a personal interest in teaching. Her current motivation for teaching was to reach students and make a difference in their lives.

Kate's love of helping children influenced her decision to major in Elementary Education. Her approach to teaching was centered on internal factors, including her moral values, which influenced her motivation to enter teacher training. One of her strongest wishes was to teach children to be good citizens.

Nancy, on the other hand, approached teaching as a family tradition. Her parents and grandparents are all teachers, so she followed their path. In her words, "I am surrounded by an atmosphere of teaching in my family." Before entering the teacher education program, she had not had any teaching experiences such as baby-sitting or volunteer teaching.

Metaphors

Kate's metaphor for teaching was taking a trip, in which teachers have adventures, come to know a new culture, and expand their experience. She further elaborated it as

[s]omething that you experience but other people around you do not realize what you've experienced. So when you come back from your trip everyone around you does not know where you went and what you did. .. They do not see all the good things you see, all the good things you do... People outside of the teaching context, like parents or just society in general, do not see all the wonderful things that go on inside of the classroom. Even though you want them to see how good it is, they cannot see because they were not with you on the trip.

Kate's dynamic metaphor provides insight into her view of her chosen profession. To start with, she attributes a private quality to teaching and the classroom, which she represents as a private space in which unique experiences occur that only teachers are able to grasp. Nobody can truly understand the value and rewards of teaching without experiencing them.

Implicit in her metaphor is her perception of teachers as learners who are excited about having new experiences and learning new things and new cultures. From her point of view, teaching is not the routine, often monotonous job that some consider it to be. Rather, it is an engaging job full of surprises, joys, and excitement, a job that requires preparation and movement as does travel. Another aspect of her metaphor includes some degree of uncertainty. Travelers cannot be sure beforehand what they will see and experience during a trip. In a similar way, teachers cannot predict what they will experience during their teaching journeys.

Nancy's metaphor for teaching was planting. In her words "[t]eachers are planters. Children are like seeds. Teachers help children grow, to be better and [become] fully realized trees." In Nancy's metaphor, teachers are care-givers who should cultivate children's natural development. Her metaphor suggests that children are potentially capable of thriving when the appropriate conditions are provided for them. Her metaphor also implies that teachers need to be patient in order to observe students' growth and realize that their efforts have been worthwhile because they contributed to students' continuing accomplishments well beyond their time in a particular classroom. While hers is a positive metaphor, its image of a teacher as a cultivator rather than an adventurer, as in Kate's metaphor may subtly confirm Nancy's view of teaching as boring.

Current emotions associated with teaching

To get some sense of who they were in the present, I asked Kate and Nancy to describe their current emotions about teaching as a career and then their strengths and weaknesses in relation to their teaching career. Though neither had yet had real classroom teaching experience, their engagement in the teacher education program had evoked emotional responses to their potential teaching careers.

Both identified stress as the main emotion they experienced, not with regard to their work in the teacher education program but when they considered situations in real schools. What Kate learned about contentious issues related to teaching in her educational law class had especially raised the level of her anxiety because the class revealed. She explained, "we learned about legal aspects of what teachers can do or cannot do. I felt a lot of pressure,... and also there is a lot of work in the first couple of years in teaching, and that makes me very stressed."

The pressures imposed upon teachers by government agencies and school boards and a high stakes testing policy were among the major factors that discouraged Kate. She was especially concerned that teachers were judged according to students' test scores, which were the accepted evidence of student learning. Most of the time, she believed, either teachers' efforts were ignored or they were exposed to very harsh criticism by the media and the public and did not get the respect they deserved from media coverage, politicians, and parents. Also, Kate was experiencing a high level of uncertainty. In her words, "I have a vision in my mind, but who knows whether it's going to work".

Kate considered being a creative as her strongest point and the reason why she chose to major in Elementary Education. She believed that teachers, in particular elementary teachers, should be very creative in order to engage children in learning. Nancy identified having learning experiences in the different social contexts of China and the US as her strongest point. She stated that her cross-cultural experiences gave her the chance to observe teachers in both China and the US, which resulted in knowledge of a wide range teaching strategies, teachers' behaviors, classroom materials, and teachers' communication skills. Both Nancy and Kate found that the courses they had taken so far made them aware of their points of weakness regarding their teacher identity. In particular, a class entitled "Communication," in which they simulated being a teacher, brought out their weaknesses.

In this class, Kate pretended to be a teacher while her classmates pretended to be parents, including troublemaker parents. She says "[i]t is easy for me to communicate with kids but not with parents." Regarding her personality, Kate sees herself as one who is intimidated by others and identifies her weakness as her tendency to become anxious when she faces a problem.

In the same class, Nancy also simulated being a Chinese teacher but in her case her classmates pretended to be Chinese students. She found that the experience did not work out as planned due to the high level of anxiety she experienced when talking in front of a group. It was then that she began to think about changing her major. Other factors also influenced Nancy's decision to give up teaching. One of her professors criticized her writing, saying that it did not satisfy college level writing requirements. This criticism was the breaking point for her. After this incident, she immediately consulted with her parents about transferring to another program. Even though she gave her fear of talking in front of a group as her main reason for leaving teaching, her professor's criticism

of her writing might have been equally important. She was discouraged by this assessment, which she felt she didn't deserve because she had always considered her English to be very good.

Nancy chose teaching because of her family's influence without have had experiences that would indicate whether this profession fit well with her personality. Nancy's articulated values regarding teaching that conflicted with her actual opinion of joining the profession herself. She initially said that "I think teachers are the rewarded persons" but later in the interview she admitted that "[t]he jobs I most dislike are doctors and teachers, but my parents are both teachers".

On one hand she saw teachers as valued persons, perhaps because her parents and grandparents are teachers. On the other hand, she considered teaching boring and disliked the fact that teachers follow the same routine every day. Also, because her parents were not with her in the US, their influence on her might have decreased leading to the decrease in her motivation to become a teacher. At the end Nancy had decided to change her major and leave the teacher education program after finishing her sophomore year.

DISCUSSION

This study demonstrates that exploring pre-service teachers' narratives of previous life experiences, their motivations for entering their teacher education programs, and their metaphors for teaching provides valuable insights into early stages of their professional identity formation, suggesting the importance of further research into their narratives and metaphors about teaching. Using narrative interviews in teacher identity research can provide clarification for both researchers and prospective teachers, who may gain insight into themselves and their suitability for teaching careers.

This analysis also illustrates how Kate's and Nancy's individual personalities affected their identity construction, a main factor influencing their processes of adaptation into teaching. Despite being in the same educational program, their approaches to teaching differed because they were greatly influenced their personal responses to their life experiences. Moreover, their different decisions suggested that whether one feels a sense of belonging to the teaching profession affects one's identity development and orientation to teaching.

Given the importance of identity in teachers' professional growth, teacher education programs should emphasize this aspect of their students' development. At this point, teacher educators might have stepped in and helped both students use their strengths to overcome their weaknesses so they could become more confident in the classroom and in dealing with other stakeholders in the educational process.

In relation to formal and informal apprenticeship, as previously discussed, students already have previous educational experiences and ideas about teaching, which they bring to their teacher education program. At this point, the task of the teacher education program should be to help potential teachers become more aware of their previously formed beliefs, dispositions, and values and how these affect their identity formation and ultimately how they teach.

This study contributes to educational researchers' and teacher educators' understanding of the socialization process of pre-service teachers. The findings and recommendations of this study may provide guidance for teacher educators in helping their students develop self-awareness and strategies for meeting challenges, so they may adapt more easily to their teacher education programs and future careers.

CONCLUSION

In this study, I have explored the adaptation processes of two sophomores in the same teacher education program as shown in their discussion of their backgrounds and experiences as learners up to their present program.

The findings of this study support much of the current literature on teacher identity and parallel with the main assumption that prospective teachers' identity formation has both personal and contextual dimensions (Avraamidou, 2014; Beauchamp & Thomas, 2009; Britzman, 2003). Referring to personal aspect of identity, Carter and Doyle (2008) stated that "the process of learning to teach, the act of teaching, and teachers' experiences and choices are deeply personal matters inexorably linked to their identity (p.120). Each student's adaptation to the teaching profession and choices at pivotal points in pursuing a teaching career are influenced by a combination of initial beliefs, towards teaching, motivations for entering a teacher education program, emotions at various times as a learner, and awareness of his/her strengths and weaknesses (Beauchamp & Thomas, 2009). Previous life experiences and how the individual interprets them influence his/her responses to experiences in a teacher education program. Thus, although Kate and Nancy entered the same teacher education program together, Kate's commitment to teaching increased while Nancy's decreased. These opposite outcomes may be understood in light of differences in their beginning identities, their motivations for entering the program, and different reactions to their experiences in it. While teaching represented an intrinsic value for Kate, who entered the program with strong conviction, it was a family tradition for Nancy, who did not have a clear direction when she started college. All these results support the work of Sugrue (1997) who claimed that student teachers' personal experiences, family environment, atypical teaching experiences like helping homework of siblings, and apprenticeship observation impact student teachers' lay theories about teaching and directly affect their identity. The findings of this study showed that Kate's earlier experiences in informal teaching such as she taught other students when she was in high school had also given her clear insight into joy of teaching as well as the challenges of teaching and the high degree of effort and patience it required. Thus she entered teaching after she had already decided that it was what she wanted to do.

Rodgers and Scott (2008) defined identity as a "shifting framework of understanding formed by multiple relationships and takes different versions depending on social, cultural, political and cultural contexts." Britzman (2003) too, drew attention to similar features of identity that greatly shaped by contextual factors. Accordingly pre-service teacher education serves as a context for pre-service teachers in forming their identity. Taking courses, having field experiences, and studying with colleagues accelerate pre-service teacher's adaptation to teaching, and directly influence their socialization (Britzman, 2003; Danielewicz, 2001). Kate's experiences in the teacher education program reminded Britzman's (1986) idea of "natural teachers," (p.451) that refers to some prospective teachers born as a teacher having a "teaching personality," (Sugrue, 1997, p.217) with necessary skills to be a good teacher. The biggest difference between Nancy and Kate was their personalities. While Nancy was following the expectations of others, Kate entered the teacher education program with a high level of awareness of both her personality and her teaching career. That means she has the teaching personality. She believed that her love of spending time with children and her creativity would fit well with being an elementary teacher. Her volunteer experiences in various contexts allowed her to see both the challenges and rewards inherent in teaching. She entered the teacher education program with clear awareness of the responsibilities of teachers.

Based on her previous informal teaching experiences, it could be assumed that Kate had a greater sense of belonging to the culture and language of the world of teaching than did Nancy, whose perception that she would not fit into a teaching career hindered her sense of belonging, resulting in her decision to exit her insipient teaching career in favor of an entirely different field.

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The Effect of Common Knowledge Construction Model Based Science Education on Entrepreneurship Skills of Secondary School Students

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Abstract

This research aims to investigate the impact of Common Knowledge Construction Model (CKCM) based science education teaching on the entrepreneurship skills of the eight grade students. The participants of this research are 50 students; 25 in control group (10 girls and 15 boys) and 25 in experimental group (9 girls and 16 boys). Quasi-experimental method was employed in the study. Entrepreneurship Scale and Semi-structured entrepreneurship interview forms were used. While the data of the Entrepreneurship Scale were analysed using dependent and independent t-test, the semi-structured Interview were analysed by content and descriptive analysis. The findings showed that current teaching process applied in CKCM-based science teaching and control group (5Es learning model) was effective on entrepreneurial skills of secondary school students. When the experimental and control groups were compared, it was found out that in the experimental group, science teaching based on CKCM was more effective on the entrepreneurial skills of students as opposed to the 5Es learning model-based science teaching used with the control group students. The effect of CKCM on entrepreneurship skills could be more clearly identified if more research is taken with different levels of teaching.

Keywords: Science Teaching, Common Knowledge Construction Model, Entrepreneurship, Eighth Grade Students.

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INTRODUCTION

Entrepreneurship skills introduced under the life skills are one of the recently introduced innovations in the Science Curriculum. The aim of this practice is to enable students to grow as entrepreneurial individuals. Entrepreneurship is defined as a step taken to realize people's dreams. In entrepreneurship, students are expected to take risks, act and produce. Production plays an important role to address student's sense of curiosity which in return increases self-esteem (Deveci, 2016; Özdemir, 2016). In the Science Curriculum, entrepreneurial skills are defined as forming relationships, planning what they should be doing and are going to do, taking risks, implementing their plans and making beginnings to achieve their goals (Ministry of National Education [MEB], 2013). As a matter of fact, this includes skills such as organizing various socio-cultural activities with individual or groups (such as competition, play, and picnic), persuasion and self-confidence. The most distinctive features that distinguish entrepreneurial individuals from others are being creative and innovative, producing new ideas and putting these ideas into practice (Amos & Onifade, 2013).

One of the important points in the Science Curriculum is to equip students with entrepreneurial skill. This is an important life skill. It has great importance in the development of qualified individuals. Compared to the previous centuries, entrepreneurial skills have become a necessity for individuals to acquire different skills in the 21st century. Individuals are asked not only to learn and use information, but to make information available for people, to analyse it from different perspectives, to have different interpretations and to make personal designs and inventions. It is thought that all these expectations can be gained more easily by providing entrepreneurship skills in schools. In many developed countries, the student is required to actively produce a product and to present it effectively. The main aim is to combine knowledge learned in the school with real life knowledge and to use it in daily life (Antonites & Van-Vuuren 2005; Bikse, 2009; Heinonen & Poikkijoki, 2006; Heinonen, 2007; Jones, 2006; Oganisjana, 2006). Therefore, entrepreneurship is seen as a career option (Deveci, 2016). In this context, the Science Curriculum prepares students for future and fulfils their duty in terms of entrepreneurship education (Beca, 2007). In addition, the basic entrepreneurship education overlaps with science education because they aim to gain similar skills to students (Deveci & Seikkula-Leino, 2018).

In recent years, one of the teaching models used in science teaching is the Common Knowledge Construction Model (CKCM). CKCM was first developed by Ebenezer and Connor in 1998. In terms of its theoretical roots, the model is based on Marton's Variation Theory of Learning and Piaget's conceptual change research (Ebenezer, Chacko, Kaya, Koya & Ebenezer, 2010). In addition, this model also draws from Bruner's philosophy that considers language as a part of culture's symbolic system, Vygotsky's zone of proximal development and Doll's ideas on science discourse and postmodern ideas on curriculum (Biernacka, 2006). The CKCM has four basic phases: Exploring and Categorizing, Constructing and Negotiating, Translating and Extending, and Reflecting and Assessing. CKCM focuses on the nature of science, socio-scientific issues, critical thinking and entrepreneurship skills (Bakırcı, Çalık & Çepni, 2017). The teaching activities in the second and third stages of the teaching model focus on the development of the entrepreneurial skills of the students.

During exploring and categorising session, activities such as scientific discourse under the supervision of teachers, inter-group discussions, and student participation are carried out (Duschl & Osborne, 2002). The main aim here is to help students understand each other's ideas, express their opinions and gain social skills such as empathy. This situation contributes to the development of entrepreneurial skills of students directly (Bakırcı & Ensari, 2018). In the third stage of CKCM, different teaching techniques are applied to help students explain their thoughts about socio-scientific issues. In addition, students are expected to find solutions to social and environmental problems in a national and international context and to participate in discussions on the nature of science. In addressing these issues, students need to consider the interaction between science, technology, society and the environment. The aim of these teaching activities in the second and third stages of the model is to develop students' entrepreneurship and critical thinking skills (Biernacka, 2006; Ebenezer & Connor, 1998).

It can be said that some of the learning support materials used in CKCM based learning environment influence students' entrepreneurship skills. Worksheet, analogies, conceptual change texts and concept cartoons can be given as examples because these teaching materials are found to be effective in providing concepts such as sharing, friendship, and dealing with friends, cooperation, leadership and honesty. (Bakırcı & Ensari, 2018). Besides the economic functioning of enterprises, entrepreneurship education aims to teach planning, negotiation, organization, communication, working with individual or group, analysis, opportunities for personal or professional business activities, risk taking. In addition to these characteristics, it aims to give the students the consciousness of self-motivation (Curth, 2011). Students can gain entrepreneurial features through science laboratory applications, in-class and extracurricular activities (Adeyemo, 2009). In CKCM based learning environments, the use of different teaching materials and laboratory-assisted teaching approaches, discussions and student-centred activities contribute to the development of students' entrepreneurial skills (Çalık & Cobern, 2017).

There are many studies on entrepreneurship in literature. These studies were mostly carried out in the fields of industry, economy and business. However, they emphasize limited work of entrepreneurship in the field of education (Bakırcı & Öçsoy, 2017; Deveci, 2018). In the literature, the studies on education have been carried out with students studying at different levels of education. Especially, studies conducted with university students were found to be more than other levels (Deveci, 2016). In education literature, research mostly focused on entrepreneurship skills, the effects of various courses and activities on entrepreneurship skills, the comparison of entrepreneurship tendencies of students in different departments and universities, and entrepreneurs, teachers, students' opinions on entrepreneurship (Akkuş & Menteş, 2017; Çetin, 2015; Temizkan, 2014). Nevertheless, it can be said that there is not enough research in literature related to CKCM. On the other hand, it has been determined that the studies conducted with secondary school students on entrepreneurship are limited (Bakırcı & Öçsoy, 2017).

The results of the research in the field of entrepreneurship are positive. For instance, students with kinaesthetic learning style has better entrepreneurial skills and this is followed by those who have visual learning styles (Çetin, 2015). Additionally, in terms of students' opinion on entrepreneurship, they stated that those who fail in their own business should have another chance. In another study, it was found that the students believe in securing their future through establishing their own business (Altıntop, 2015). Entrepreneurship, which is among the life skills of the current century, is included in the Science Teaching Curriculum in 2018. This reveals importance of these skills because, it is thought that an individual, who has entrepreneurship skills, will adapt better to society in the future and s/he will overcome problems in daily life more easily. From this point of view, this research is important in terms of understanding the effect of CKCM on students' entrepreneurial skills.

When the literature is examined, it was seen that the entrepreneurship course given at universities changes the perception of problem solving in daily life and provides an increase in the orientation towards entrepreneurship. Besides, it was seen that entrepreneurial individuals adapt more quickly to daily life (Beca, 2007; Bikse, 2009; Weber, 2011). Many studies show that primary school (primary and secondary school) years are important in gaining entrepreneurship skills (Deveci & Seikkula-Leino, 2018). One of the characteristics sought in qualified individuals is entrepreneurship. Teaching models and approaches have great importance in the training of entrepreneurial individuals. Therefore, this study was carried out with secondary school students. The main purpose of using CKCM is that this model is a teaching model aiming to provide students with entrepreneurial skills (Bakırcı, Çalık & Çepni, 2017). It can be said that the discussions following the experiments and activities in the second stage of the CKCM and the collaborative activities in the third stage of the model will have an impact on the entrepreneurial skills of the students. In the literature reviews, there exist no study to investigate the effect of CKCM science teaching - based on entrepreneurial skills. In this respect, it is thought that this study will contribute to the literature. In addition, it is considered that the CKCM could be an alternative teaching model for teachers who will provide entrepreneurship skills to students. This research aims to investigate the effect of CKCM based science teaching on the

entrepreneurial skills of eighth grade students. For this purpose, the following research questions were sought:

What is the effect of science teaching based on the CKCM on entrepreneurial skills of eighth grade students in the experimental group?

What is the effect of science teaching based on 5Es learning model on entrepreneurial skills of eighth grade students in the control group?

Has there been any change in the entrepreneurial skill levels of eighth grade students in science teaching in the experimental and control groups after the implementation?

METHOD

Research Design

The aim of this study was to determine the effect of science teaching based on the Common Knowledge Construction Model on the entrepreneurship skills of eighth grade students. This research method is called the research design in which randomly assigned assignments are made to the groups to which the application will be made when the experimental design is not applied in educational research (Çepni, 2011). Since the measurements of the experimental and control groups of different subjects are compared, it is known as an unrelated pattern. They are defined as related patterns since they are measured in relation to the dependent variable before and after the experimental procedure (Karasar, 2017). In order to find answers to the research questions, entrepreneurship scale was applied as pre-test and post-test and semi-structured interview was applied as post-test. The experimental design of the research is given in Table 1.

Table 1. Experimental Design of Research

Groups	Pre-test	Process	Post-test
Experimental	Entrepreneurship Scale	In the experimental group, the courses were processed according to the Common Knowledge Construction Model. The study material was developed by researchers.	Entrepreneurship Scale Semi-structured Entrepreneurship Interview Form
Control	Entrepreneurship Scale	The courses were taught according to 5Es learning model. The related activities in the courses are taken from the 8 th grade Science Textbook proposed by the Ministry of National Education.	Entrepreneurship Scale Semi-structured Entrepreneurship Interview Form

Study Group

The sample of the study consists of 50 students (25 members for the study group and 25 for the controls) studying in the eighth grade of a secondary school in a province in Eastern Anatolia in the 2017-2018 academic year. The participants of this research are 50 students (25 experiment group and 25 control group) in the eighth grade of a secondary school in the centre of the town of Tusba, Van during 2017-2018 academic year. The experimental group consisted of 10 female and 15 male students; the control group consisted of 9 female and 16 male students. The participants were randomly assigned to experimental and control groups. There are three classes of eighth grade in the school: 8/A, 8/B and 8/C. After applying the entrepreneurship scale to these three classes, the participants were identified by taking the results from these scales into consideration. According to the results of this scale, 8/A and 8/B classes showed to have similar level of knowledge whereas the knowledge of entrepreneurship of 8 /C was different than the other two classes. Therefore, 8/C was not included in the research. It was decided that 8/A would be the experimental group and 8/B branch would be the control group. While the students to be interviewed were selected, 7th grade of science

courses of students were ranked from the lowest to the highest. The mean scores were divided into three equal parts and two students were randomly selected from each level and in total 6 students were interviewed. Semi-structured interviews lasted approximately 25-30 minutes. Interviews were held in the classroom reserved for the Science course. According to the ethics of the research, the students in the experimental group were coded as D₁, D₂, D₃,D₂₅,, and the control group students as K₁, K₂, K₃,K₂₅.

Implementation

The course lasted around six weeks in the experimental and control groups. The courses in the control group were based on the current teaching model. The researcher worked with the materials that align with the CKCM's teaching method for the experimental group. The plan and materials employed in current teaching method were used with the control group were used. The CKCM-based activities used in the experimental group were developed and used by the researchers. The teaching was carried out by the same teacher in both groups. The Structure and Properties of Substance Unit consists of six topics. One of these issues is "Chemical Industry in Turkey". A cross-section of the implementations in the experimental and control groups is presented in Table 2 below.

Table 2. A Cross-Section of the Implementations in the Experimental and Control Groups.

	Control Group	Experimental Group
Pre-test	The Entrepreneurship Scale was administered as a pre-test before starting the practice. The scale was given 40 minutes.	The Entrepreneurship Scale was administered as a pre-test before starting the practice. The scale was given 40 minutes.
Implementation	The courses were taught according to 5Es learning model. The related activities in the courses are taken from the 8th grade Science Textbook proposed by the Ministry of National Education.	In the experimental group, the courses were processed according to the Common Knowledge Construction Model. The study material was developed by researchers.
	In the engage phase: "What is the chemical industry for students?" The question was asked and then the question was asked about the relationship between the related pictures and the textbook. Thus, the preliminary information of the students was revealed with the brainstorming technique. The students were informed about the gains and informed about the subject.	In the Exploring and Categorizing phase: Students were asked questions about the key concept to reveal their prior knowledge about the subject. In order to connect with the chemical industry, firstly the students were asked about their industrial and industrial concepts. Then the chemical industry related "Word Association Test" was distributed to students. Then, the students were informed about the gains.
	In the explore phase: The students were given the opportunity to read the related section in the Science textbook. Then, the table of import and export products in the textbook was examined to the students. In this way, students gained awareness about this issue. From the past to the present, students have realized that the chemical industry has gone through different stages.	In Constructing and Negotiating phase: In the first stage, students' preliminary information and misconceptions about the subject were determined. In the preliminary information of the students, there was a class discussion for correcting the wrong information. From the past to the present, a study leaf about the products imported and exported in our country was distributed to students. Then, a video about production, import and export of large-scale companies in our country was shown to the students. In this video, important elements about entrepreneurship were discussed among students. At this stage, the elements of the nature of science were also discussed indirectly.
	In the explain phase: The teacher was given feedback on the part of the students to correctly structure the information they reached in the second stage. With the question-answer technique, the students' knowledge about the subject was reinforced. In addition, the life story of our businessmen, Sakip Sabanci, was shown to the students. This video tells the students about the entrepreneurial direction of Sakip Sabanci.	In Translating and Extending phase: Based on the videos they watch students in the chemistry of the future which will be an important profession in Turkey were discussed. In addition, as a country, what could be imported in the future was discussed. After this event, an entrepreneurial event was prepared based on six-hat thinking technique. Sakip Sabanci's life story was shown to the students. A concept cartoon related to influenza vaccines has been distributed to the students in the pharmaceutical sector. Thanks to this activity, influenza vaccines, which are socio-scientific subjects, were pointed out. The students were taught the subject effectively.
	In the elaborate phase: The relationship of the knowledge of the students about the chemical industry with the other courses was mentioned. Use of this topic in daily life was questioned with the help of question and answer technique. The benefits and disadvantages of influenza vaccines and antibiotic use were discussed. The students were asked what influenza vaccines and antibiotic (drug) use might have in connection with entrepreneurship.	

	In evaluate phase: In order to find out whether the students learn the topic, the multiple-choice and open-ended evaluation questions in the textbook are solved.	In Reflecting and Assessing phase: Such complementary assessment and evaluation techniques as “Word Association Tests”, “Structured Grid” and “Diagnostic Tree” were utilized to evaluate the learning’s outputs.
Post-test	After the application; Entrepreneurship Scale and Semi-Structured Entrepreneurship Interview was applied as a post-test.	After the application; Entrepreneurship Scale and Semi-Structured Entrepreneurship Interview was applied as a post-test..

Data Collection Tools

In this study, the Entrepreneurship Scale (ES) developed by Gömleksiz and Kan (2009) was used as a data collection tool. The scale has 41 items. The Cronbach Alpha reliability coefficient of the scale was 0.90, the KMO value was 0.794 and the Bartlett test result was 2611.626. Bartlett test results were found to be significant at 0.05 level (Gömleksiz & Kan, 2009). This scale consists of three dimensions: creativity, critical thinking and entrepreneurship skills. In this scale, there are 13 items related to creativity, 12 items related to critical thinking and 16 items related to entrepreneurship skills. For the purpose of the study, items related to entrepreneurship skills were sampled. In deciding on the implementation of the items in the entrepreneurship dimension of the scale, the opinions of three faculty members who are specialized in the field and have many publications about the field were taken. The reliability of the scale was re-calculated by the researchers. Entrepreneurship scale was distributed to 250 students studying eight grades. The data were calculated by using SPSS program and the reliability coefficient of the scale was calculated as 0.83. This value shows that the scale is reliable (Büyüköztürk, 2011).

The second data collection used in the research was Semi-Structured Entrepreneurship Interview. The interviews were conducted to determine the opinions of the eighth grade students about entrepreneurship and entrepreneurship skills and to verify the entrepreneurship scale. An interview form consisted of eight open ended questions were prepared and then this was reduced to five questions. The reason for decreasing the number of questions to five is that the third, sixth and seventh questions do not fit the purpose of the research question. These questions were removed by the researcher in the interview form. The final version of the interview form is presented to the expert opinion again. The consistency, conformability, credibility and transferability instead of the validity and reliability of the data were examined (Denzin & Lincoln, 1994). The data obtained by the semi-structured interview and the themes and codes examined by three different researchers were determined. The, another expert looked into the themes to ensure the credibility of the research. To ensure transferability, the appropriate sampling was employed and the reader was given a detailed explanation. Unprocessed data, findings and interpretations were recorded for the validity of the study.

Data Analysis

The quantitative data were analysed with SPSS 21.0. The score ranges were categorized as effective (2.34-3.00), less effective (1.67-2.33) and ineffective (1.00-1.66). Descriptive and content analysis was used to analyse semi-structured interviews. The interviews were recorded. The recorded interviews were transferred to the electronic environment and re-listened to ensure that there were no missing or incorrect transfers. Then, a thematic framework was determined for descriptive analysis. It was determined which students' views were within the scope of the theme and the findings were supported by direct quotations. For the descriptive analysis to be valid, the data collected at the end of the interviews were summarized and the students were asked to confirm whether the summaries were correct whether there was anything they would like to add and remove. To maintain the reliability of the data, the data transferred to the electronic environment were examined and coded by different experts. The codes were then compared for accuracy. In order to determine the consistency of the codes put forth by different researchers, the disagreement and consensus points were calculated with the formula that Miles and Huberman (1994) stated. Thus, inappropriate themes and coding were reorganized or removed, depending on the purpose of the research. The compliance rate of the semi-

structured interview data was found to be 82%. The fact that the compliance ratio is above 70% indicates that the analysis is reliable (Miles & Huberman, 1994). The themes were identified and presented in a table.

FINDINGS

The arithmetic means and standard deviation values of the pre and post test scores of the experimental and control group students are given in Table 3.

Table 3. Arithmetic mean and standard deviation values of the pre-post-test scores of the entrepreneurship scale of experimental and control group students

	Items	Experiment Group				Control Group			
		Pre test		Post test		Pre test		Post test	
		\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss	\bar{X}	Ss
1	Entrepreneurship allows me to evaluate opportunities.	2.42	0.76	2.84	0.47	2.41	0.73	2.44	0.71
2	Entrepreneurship teaches that I have to trust myself to do a job	2.35	0.80	2.61	0.68	2.42	0.72	2.81	0.49
3	Entrepreneurship creates awareness of fulfilling my responsibility	2.31	0.81	2.80	0.50	2.31	0.88	2.48	0.77
4	Entrepreneurship makes me dream of what I want to achieve.	2.38	0.79	2.72	0.61	2.38	0.81	2.64	0.56
5	Entrepreneurship allows me to self-direct myself while working.	2.28	0.84	2.76	0.43	2.24	0.83	2.56	0.65
6	Entrepreneurship teaches me to think fast when making decisions.	2.12	0.83	2.44	0.82	2.32	0.90	2.44	0.76
7	Entrepreneurship teaches that I have to follow my decision to be successful.	2.40	0.81	2.56	0.71	2.20	0.82	2.60	0.64
8	Entrepreneurship teaches that I have to finish what I started.	2.40	0.81	2.72	0.61	2.42	0.75	2.60	0.64
9	Entrepreneurship teaches that I must be patient to overcome the obstacles I face.	2.48	0.87	2.80	0.57	2.24	0.92	2.52	0.71
10	Entrepreneurship teaches that it is necessary to take risks to achieve.	2.00	0.91	2.60	0.70	2.12	0.83	2.44	0.76
11	Entrepreneurship allows me to easily convince others	2.20	0.81	2.60	0.64	2.32	0.75	2.60	0.57
12	Entrepreneurship provides me with courage to explain my work.	2.32	0.80	2.56	0.71	2.38	0.81	2.56	0.76
13	Entrepreneurship teaches that I have to listen to my friends' thoughts respectfully.	2.42	0.83	2.80	0.57	2.32	0.85	2.52	0.65
14	Entrepreneurship helps me to produce new ideas and to realize them.	2.12	0.83	2.68	0.55	2.28	0.84	2.48	0.77
15	Entrepreneurship allows me to learn about different professions and what they do.	2.36	0.88	2.60	0.70	2.40	0.76	2.52	0.65
16	Entrepreneurship helps me to identify the challenges that I may encounter when performing a given task.	2.28	0.84	2.60	0.64	2.32	0.80	2.72	0.61
	Total	2.30		2.67		2.32		2.55	

When Table 3 is examined, it is seen that the pre-test scores of experimental group students are at less effective (1.67-2.33) and Effective level (2.34-3.00). The items that are rated as less effective are 3, 5, 6, 10, 11, 12, 14 and 16, respectively. On the other hand, the items rated as effective are 1, 2, 4, 7, 8, 9, 13 and 15. It was determined that the arithmetic mean of the post test scores of the experimental group students was at the effective level. In the post test, it was found that the two items with the highest arithmetical average in the entrepreneurship scale were items 1 and 3. In summary, the students' entrepreneurship skill points were gathered at a less effective level and their average score was 2.30. The post-tests showed that the arithmetic averages of the students' entrepreneurship scale scores were at an effective level. Total mean arithmetic score of the scale was found to be 2.67.

When Table 3 is examined, it is seen that the answers of the students in the control group to the entrepreneurship scale are at least effective (1.67-2.33) and effective (2.34-3.00) level. The items 3, 5, 6, 7, 9, 10, 11, 13, 14 and 16 are at least effective level whereas items 1, 4, 8, 12 and 15 are at effective level. It was determined that the control group students' arithmetical means of all items were effective in the pre-test. The highest arithmetic mean was found to be the 2nd item ($\bar{X}=2.81$) and the 16th item ($\bar{X}=2.72$).

As a result, the arithmetic mean of the pre-test total scores of the control group students on the entrepreneurship scale was 2.32, whereas the pro-test was 2.55. In the pre-test, the arithmetic averages of the students' entrepreneurship scale scores were found to be effective whereas in the pro test, they were at the least effective level.

The answers of the experimental and control group students to the Semi-Structured Entrepreneurship Interview are presented below.

Table 4. Students' responses to the question of "What can you say about the characteristics of the entrepreneurial person?"

Theme	Codes	Experiment Group						Control Group					
		D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	K ₁	K ₂	K ₃	K ₄	K ₅	K ₆
Characteristics of Entrepreneurial person	Makes trade	+	+	+	+	+	+	+	+	+	+	+	+
	Innovative	+	+	+	+	+	+	+	+	+	+	+	-
	Takes risks	+	+	-	+	+	-	-	+	+	-	+	-
	Confident	+	+	+	+	+	+	+	+	-	-	+	-
	Organised	+	+	+	+	-	+	+	-	+	-	-	-
	Good communication skills	+	+	-	+	-	-	+	+	-	-	-	+
	Persuasive	+	+	-	-	-	+	+	+	-	-	-	-
	Resilient	-	+	+	-	+	-	-	+	-	-	-	-
Characteristics of a proactive person	Open to trainings in related field	-	-	-	-	+	+	-	-	-	+	-	-
	Social	+	+	+	+	+	+	+	+	+	+	+	+
	Sincere	+	+	+	+	+	+	+	+	+	+	+	+
	Friendly	+	+	-	-	-	+	+	+	+	+	+	+
	Helpful	+	-	+	+	-	-	+	+	+	-	-	+
	Sociable	+	+	-	+	+	-	-	+	-	-	-	+

Students of experimental group defined the characteristics of entrepreneur as someone who makes trades, feels confident and is passionate about innovation. Student D₃ stressed trade code and added: *"An entrepreneur is a person who is engaged in commerce and who has tried all sorts of ways to perform the assigned task."* Five students stressed the code of being organised. For instance, D₁ stated: *'Entrepreneurs are the people who can make the employees in the companies perform their duties without interrupting and who can organize the group.'* Two students expressed their opinions as: *"These people are experienced because they have been managers before, they are not entrepreneurs."* *"They are the managers of the companies of their families."* K₄ teased out the code of the training in their relevant field: *"They have also become entrepreneurs when they graduate because they have been trained to be so at university."*

All students in the experimental group explained the characteristics of the proactive students as social, friendly and sincere. D₂ said: *"Anyone who can easily adapt to any environment and who is interested in a variety of activities is a proactive person."* D₅ indicated: *'The proactive person is sympathetic, and full of love and affection.'* Other students the used codes of easy-going and helpful code. D₁ expressed as follows: *'They are people who do their best.'*

Table 5 presents the experimental and control group students' thoughts about the founder of Apple, Steve Jobs and the creator of Facebook social networks Zuckerberg.

Table 5. Students' responses to the question of 'Do you think people like Zuckerberg, or Steve Jobs are entrepreneurs? Why?'

Themes	Codes	Experiment Group						Control Group					
		D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	K ₁	K ₂	K ₃	K ₄	K ₅	K ₆
Yes	Take risks	+	+	+	-	-	+	+	+	-	+	+	-
	Has the courage	+	+	+	-	-	+	-	+	+	-	+	-
	Innovative	+	+	+	-	-	+	+	-	+	-	+	+
	Problem-solvers	+	+	-	+	-	-	-	-	-	+	+	-
	Determinant	+	-	-	+	-	-	+	-	-	-	+	-
	Good organizers	-	-	-	+	-	+	-	+	-	-	-	-
	Research skills	+	-	+	-	-	-	-	-	-	-	+	-
	Auto-control	+	+	-	-	-	-	+	-	-	+	-	-
No	Experience	-	-	-	-	-	-	-	-	-	+	-	+
	Family business	-	-	-	-	+	-	-	-	-	+	-	+
	Education in the related field.	-	-	-	-	-	-	-	-	-	+	-	-

Four students of the control group found Steve Jobs and Zuckerberg entrepreneurs. They have teased out these people's ability to take risks, have the courage and innovation skills. D₂ and D₃ said: *"They did not know if touchpad phones would be so popular, but they took a risk and produced"* *"Zuckerberg designed Facebook and he is constantly updating it. This shows that he is innovative."* Three students in the control group stressed the problem-solving and research skills of Jobs and Zuckerberg. Some students said that Jobs and Zuckerberg are not creative. They argued that these people were successful because they had family business, received education in this area and had experience. D₅ said *"The parents of these people founded the company, and they have the experience and learned to become entrepreneurs."*

Four students from the control group defined Jobs and Zuckerberg as entrepreneurs whereas two did not regard them as so. Those who think that they are entrepreneurs said these people were innovative, could take risks and has the courage. K₃ said: *"They have created stuff that no one has ever heard so that's why I could say that they are creative."* Participants emphasized the researcher identity of these people. K₅ expressed: *"They have researched into the ideas that could create good opportunities in future and designed their products accordingly."* Two students who said Jobs and Zuckerberg were entrepreneurs argued that these people inherited their family business and gained experience within the time. K₄ and K₆ stated: *"These people are not entrepreneurs but experienced since they have the experience of being managers."* *"They are the managers of the companies that their families transfer."* K₄ said: *"They have also become entrepreneurs because they have studied in departments related to this field."*

Table 6 presents students' ideas with regard to science education and how it can contribute to the entrepreneurial skills of students.

Table 6. Students' responses to 'What are the contributions of the science education projects to the entrepreneurial skills of students?'

Theme	Codes	Experiment group						Control Group					
		D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	K ₁	K ₂	K ₃	K ₄	K ₅	K ₆
The Contribution of Projects to Entrepreneurship	Research	+	+	+	+	+	+	+	+	+	+	+	+
	Taking Responsibility	+	+	+	+	+	+	+	+	+	+	+	+
	Exchanging ideas	+	+	+	+	+	+	+	+	+	+	+	+
	Finding research topics	+	+	+	+	+	+	+	+	+	+	+	+
	Analysing the projects	+	+	-	+	-	-	-	+	-	-	+	-
	Getting support from teacher	+	+	+	-	-	-	+	-	-	-	-	+
	Taking a decision on Project topic	+	+	+	-	+	-	+	-	-	+	-	+
	Project presentation	+	+	+	-	+	-	+	+	+	-	-	-

When Table 6 is examined, it was stated that all the students in the experimental group conducted projects in science education and they conducted research, took responsibility, found a project topic and exchanged ideas with friends. D₃ stated: *“Before I start the project, I try to find out a potential topic. Then, I discuss it with my friends and I take the opinion of my teacher. Then I allocate the tasks among of my friends.”* D₅ said *“In the project, we ask people what tasks they want to be responsible for and share the tasks.”*

During the interviews with the control group students, students expressed following code: doing research, taking responsibility, finding a project topic and exchanging ideas with their friends. K₄ expressed *“We assign a responsibility to very project member.”* K₁ expressed the importance of findings *“We choose one of the situations that is problematic.”* K₂ said *“Once we have identified research problem, we looked into how we can address it.”*

The opinions of the students in the experimental and control groups about the importance of self-confidence and courage for entrepreneurship are given in Table 7.

Table 7. Student responses to the questions of ‘Do you think that self-confidence and being courageous are important for being a entrepreneurial?’

Theme	Codes	Experiment Group						Control Group					
		D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	K ₁	K ₂	K ₃	K ₄	K ₅	K ₆
Important issues about the Entrepreneurship	Effective Communication Silks	+	+	+	+	+	+	+	+	+	+	+	+
	Speaking effectively	+	+	+	+	+	+	+	+	+	+	+	-
	Being Competitive	+	+	+	+	+	+	+	-	+	+	-	+
	Marketing skills	+	+	+	+	-	-	+	-	-	+	-	-
	Reassuring others	+	+	-	+	+	-	-	+	+	-	+	-
	Taking decisions about future	+	+	+	+	-	-	+	-	-	+	-	-
	Creating brand	-	-	-	+	+	+	+	+	-	-	-	-
	Being optimistic	+	+	+	-	-	-	-	+	-	-	-	-

The experimental group stated that self-confidence and courage are important for entrepreneurship. The students stated that these concepts provide effective communication and contribute to risk taking and competition. D₂ said; *“If the person is not self-confident and courageous, s/he may give up when faced with challenges and cannot succeed. Therefore, being self-confident is important to overcome the difficulties.”* D₆ said; *“The confident people can easily say their thoughts without hesitation and easily explain”*. D₁ stressed the importance of taking risk; *“Self-confident people stand behind their ideas and thoughts.”*

The control group students pointed out the importance of effective communication and risk taking. K₂ stated that *“An entrepreneur knows how to communicate easily.”* Four students expressed the competitiveness concept. K₁ said: *“Someone who is not brave and self-confident will not be considered as competitive even if they come up with new products. They will not be taken into consideration.”*

The opinions of the experimental and control group students on the content and evaluation of the elective entrepreneurship course are given in Table 8.

Table 8. Student responses to the question of ‘If you had an elective course on entrepreneurship in your school, how would you like the content and evaluation of this course?’

Themes	Codes	Experiment Group						Control Group					
		D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	K ₁	K ₂	K ₃	K ₄	K ₅	K ₆
Course Content	Introducing the characteristics of skilled people	+	+	+	+	+	+	+	+	+	+	+	+
	Contemporary topics	+	+	+	+	+	+	+	+	+	+	+	+
	Introducing the lives of entrepreneurial people	+	+	+	+	+	+	+	+	+	+	+	+
	Project- based content	+	+	-	-	+	+	+	+	+	-	-	-
	Introducing institutions that support entrepreneurs	+	+	-	+	-	+	+	+	+	+	-	-
	Introducing legislation about entrepreneurship	-	+	+	+	+	-	+	-	-	+	+	-
Assessment	Process-oriented assessment	+	+	+	+	-	+	+	+	-	+	-	+
	Assessment with open-ended questions	+	-	-	+	-	-	-	-	-	-	+	-
	Performance assessment	-	+	+	-	+	+	+	+	-	-	-	-
	Presentation assessment	+	+	+	-	+	-	+	+	+	-	-	+
	Result oriented assessment	-	-	-	-	-	-	-	-	-	-	+	-
	Mixed assessment	+	+	+	-	-	+	+	-	-	+	-	-

Experiment group students stressed that an entrepreneurship course should include contemporary topics and introduce the lives of entrepreneurs. D₅ said; *“From the past to the present, the lives of those who are entrepreneurs should be included and their important achievements should be explained.”* D₃ said; *“The characteristics that should be in an entrepreneurial individual should be included.”* The experimental group students stated that the understanding of elective entrepreneurship course should be process-oriented, open-ended questions and performance-based. D₂ said; *“Assessment should be extended over time and based on performance”*. D₆ addressed to the importance of performance based assessment: *‘The assignments we do should assess our performance.’*

The interview group students made similar explanations with the experimental group about the content of the elective course. K₃ stressed that characteristics of qualified people should be included in curriculum: *“The characteristics of an entrepreneur should be explained.”* K₅ said; *“What the past entrepreneurs have done can be presented.”* The control group students stated that there should be process-oriented evaluation of the elective course. K₁ made the following suggestions *“Instead of taking an exam, the work we produce throughout the course should be evaluated.”*

DISCUSSION AND CONCLUSION

In this study, the effect of CKCM based science teaching on the entrepreneurial skills of eighth grade students was investigated. In this context, the entrepreneurship scale and the findings were discussed.

Discussion of the Findings in Entrepreneurship Scale and Conclusion

While the arithmetic average of total entrepreneurship scale pre-test scores of the experimental group students was 2.30, it was seen that the arithmetic average increased to 2.67 in the post test. In addition, after the implementation, the arithmetic mean of all items in the scale was determined as “effective” (Table 3). These findings suggest that CKCM-based science teaching in the experimental group is effective on eighth grade students. This may be related to the project-based research conducted by students. Additionally, teacher showed videos about the lives of entrepreneurial individuals which could have potentially played a role. One of the social characteristics of entrepreneurial individuals is to take responsibility (MEB, 2013). In the CKCM-based entrepreneurship education, there may be an increase in the awareness of the students because students are required to produce projects that focus on achievement. Ersoy and Başer (2009) argued that

teachers should do activities to motivate the classroom, should provide opportunity for students to make free trials and should prepare flexible learning-teaching environment. Similarly, the research of Seikkula-Leino (2011) suggested that cooperative learning, learning by doing and experiencing, peer teaching, inviting entrepreneur individuals to the school, group work, drama technique and project-based learning are activities for developing entrepreneurship skills. In this study, peer teaching, drama technique and the invitations of the entrepreneurial individuals played an important role in the arithmetic average of the last test entrepreneur scale score as being “*effective*”. At the same time, inclusion of activities that serves the entrepreneurial skills in the second and third stages of the CKCM may have played a role.

While the arithmetic average of the total pre-test scores of the control group students was 2.32, it found that the arithmetic average increased to 2.55 in the post-test. The arithmetic means of all items in the scale were determined as “*effective*” (2.34-3.00) after the implementation to the control group (Table 3). This means the current teaching model in the control group has an effect on the entrepreneurial skills of the eighth-grade students. Changes after the implementation to the control group is believed to result from teachers handling the biographies of individual entrepreneurs in Turkey. In addition, the current teaching model that consist of active participation of students and guidance of teachers is also effective (Ayvaci & Bakırcı, 2012; Çelik & Avcı, 2018; Yeşilpınar-Uyar & Doğanay, 2018). The use of drama technique in the deepening phase of the current teaching model is thought to be effective on entrepreneurship. In many studies, it has been found that drama technique is effective in developing students' entrepreneurship characteristics (Selanik-Ay & Acar, 2016). In addition, it was found out that the experiment-based research included in the current teaching model improved students' self-confidence, eliminated their feelings of curiosity, increased their analytical thinking skills, and motivated them to learn (Çelik, Özbek & Kartal, 2013; Karakuş, 2009). Since all skills directly or indirectly affect entrepreneurship, science teaching with existing teaching model has an effect on students' entrepreneurship skill scores.

As a result, science teaching based on the present teaching model (5Es learning model) conducted in the control group and CKCM conducted in the experimental group was found to be effective on the entrepreneurship skills of secondary school 8th grade students. Arithmetic mean difference of pre-test and post-test total scale scores of the experimental group students was found to be 0.37, and the difference was 0.23 in the control group. This finding suggests that CKCM is more effective on the entrepreneurial skills of the students. This may be related to the use of different teaching materials in CKCM based science teaching (analogy, concept caricature and worksheets etc.) and the use of scenarios of entrepreneurship skills as part of the teaching materials.

Discussion of the Findings of Semi-Structured Interviews

It was found that the experimental and control group students made similar explanations about the characteristics of the entrepreneur individuals (Table 4). Students mentioned the characteristics of an entrepreneurial individual as; trade, risk-taking, persuasiveness, persistence, self-confident and effective communication skills. In addition to this, students have explained the concept of entrepreneur as being social, helping people, communicating easily with others, being friendly and sincere. Students were affected by the entrepreneurial people in their environment. In addition, visual and written media may have affected this result (Avcı, 2016). Research of Kuşay (2017) mentioned that internet-based social media environments consisting of user uploaded contents for sharing purposes mobilizes the creativity and entrepreneurship features of users rather than mutual communication. In the interview, three students in the experimental group concluded that being proactive is necessary for entrepreneurship, but entrepreneurship is not a prerequisite for being proactive. On the other hand, it is noteworthy that none of the control group students mentioned this conclusion. This can be explained by the CKCM based science teaching experimental group received because CKCM focuses on skills such as practice, analysis and synthesis starting from higher-order thinking skills (Biernacka, 2006; Ebenezer & Connor, 1998; Wood, 2012). The control group students could not reach this level despite their activities and practices.

The second question of the interview investigated the opinions of the experimental and control group students about the technological device producer firm owners' and the social media founders' entrepreneurial characteristics. Five of the six students interviewed in the experimental group indicated that the owners of technology firms had entrepreneurial characteristics. In the control group, four of the six students interviewed stated that these people have entrepreneurial characteristics (Table 5). According to students, these people are entrepreneurs because they are courageous, innovative, determined and problem-solving. In addition, students emphasized the importance of having research skills. On the other hand, some students stated that the social media or big firm owners are not entrepreneurial individuals because they inherited their family business. According to the interviews, students believe that entrepreneurs do not initially have an entrepreneurial character, their entrepreneurial character is related to the training they received in their fields. It was determined that the experimental group students' explanations about this question were more comprehensive. It can be argued that watching the videos reflecting the lives of the domestic and foreign entrepreneurs in the experimental group is effective in the formation of this difference (Çetin, 2015; Deveci, 2016). As teenagers, these students are looking for people who will be role models when they choose their professions (Akdeniz, 2009). For this reason, the presentation of the entrepreneurial individuals and visual presentation of them may have attracted the attention of the students. It can be argued that experimental group students know more about the entrepreneurial individual and they can easily identify the people with entrepreneurial characteristics.

Third question looks into whether project assignments have contributed to the entrepreneurial skills of the students in the experimental and control groups. The students stated that they collaborated with their teachers and peers at every stage of developing the project. After the feedback of the teacher, if the project subject was appropriate, tasks were distributed among group members and data collection, report generation, presentation were completed. When these explanations are taken into consideration, one can argue that students know the steps of the scientific method. It is possible to say that the project and performance assignments given by the teachers in the previous years were effective in following the steps of the scientific method. The exhibition of the student projects that are supported by the Ministry of National Education and Scientific and Technological Research Council of Turkey at the end of the year within the scope of science fairs may have also been effective. Students conduct research under the supervisor of the teacher in order to develop projects. In this process, it can be said that sharing instructions about the scientific research method with the students is effective.

The fourth interview question was about the self-confidence of the experimental and control group students in entrepreneurship. Experimental and control group students explained the concepts of trust and courage were associated with competitiveness, effective communication and taking risk. The students of the experimental group stated that self-confidence and courage are important for entrepreneurial skills as these two concepts can gain them different points of views (Table 7). In the experimental group, six thinking hats technique was used in the third stage of CKCM. The technique of six thinking hats gives students the opportunity to look at a subject from different perspectives (Bakırcı, Çalık & Çepni, 2017; Can, 2005). In this way, students use logic rather than acting with emotions. In addition, instead of memorizing information, students are encouraged to think in different ways by using their creativity. This technique helps them think practically and discover new ideas in decision making. The six thinking hats technique provides important results in problem solving (Altıkulaç-Akhan, 2010; Güneş, 2012).

The last question of the interview looked into experimental and control group students' thoughts about what should be included in the content of an entrepreneurship course. More than half of the students in the experimental group stated that the content of the course should be project based, include current topics and the life stories of entrepreneurial individuals. Additionally, students wanted to be introduced with the organizations which support the entrepreneurial individuals, to talk about the legislations on entrepreneurship and to explain the characteristics of qualified individuals. On the other hand, more than half of the control group students made similar comments with the experimental group students. Experimental group students stated that evaluation of students should be based on

modern assessment and process-oriented assessment techniques. Although the two groups of students made similar statements, the experimental group students emphasized the process-oriented assessment. In these explanations of both groups' students; it is thought that the different intelligence areas of the students and the assessment habits of them are effective. Özkan (2007) point out that not only the teacher but the child himself, his/her parents, and even the other students are important in the assessment of the students. In addition, it was stated that it would be more accurate to carry out a process-oriented assessment in which student and parents are part of the assessment, instead of the product-oriented evaluation (Bakırcı, Kara & Çepni, 2016). Akamca (2003), on the other hand, emphasized that students should be assessed in different ways because they learn differently.

RECOMMENDATIONS

In order to observe the effect of the Common Knowledge Construction Model on Entrepreneurial skills, research interrelated with science education as well as with other units or topics of the field should be conducted based upon different levels of teaching.

In the literature, it can be said that the scale and questionnaire on entrepreneurship skills of secondary school students are limited. Therefore, questionnaires and scale development studies can be conducted for secondary school students.

Based upon the aforementioned premises further studies should be conducted prospectively in order to determine the exact relationship between entrepreneurship and Common Knowledge Construction Model.

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Do 21st Century Teachers Know about Heutagogy or Do They Still Adhere to Traditional Pedagogy and Andragogy?

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Abstract

There are revolutionary changes in the field of education to keep up with the benefits of globalization (Hase & Kenyon, 2014). The necessity of taking the learner to the center within the framework of Roger's (1951) humanistic psychology is also supported by educationalists (Hase & Kenyon, 2014; King, 1993; Novak & Gowin, 1984). If this educational change is applicable to all grades and disciplines then permanent solutions can be reached. Examining the researches, it is observed that heutagogy is a useful strategy to make the learners self-determined ones in their learning process especially in higher education. This paper presents the participants perceptions on heutagogical implementation and its practicality. It will contribute to the field for a number of reasons. Firstly the perceptions of the teachers who have also an administrative role such as directors or vice directors at their schools on this issue have not been studied before. Secondly, their views are of great importance, since high schools are the last steps before higher education. So the attitudes and views of teachers on this grade are important for students' readiness for the next step. Lastly it has some contributions for the heutagogy model in educational settings.

Keywords: Heutagogy, Self-determined Learning, Double-loop Learning, Student-centered Teaching

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INTRODUCTION

For more than a century education has suffered due to the behavioristic approach which has taken learning as just a change in behavior (Novak & Gowin, 2004). Rejecting this view, educators today are tasked with helping the learners to survive in the ever changing lifelong path. Since, there is a revolutionary change in human learning. This change has affected the whole education system in twenty-first century. There are no barriers to be an effective learner any more (Blaschke & Hase, 2014). Education is now an adventure which has no limits to the power of human mind to construct knowledge (Novak & Gowin, 2004). In order to construct knowledge and to be capable lifelong learners they need to be the agents in their own learning. Hence, they need more than what pedagogy and andragogy offer. They both are not qualified enough in developing self-determined learners (Blaschke, 2012; Hase & Kenyon, 2000; 2007). Heutagogy on the other hand, is the holistic model of self-determined learning defined by Hase and Kenyon in 2000. It has principles rooted in andragogy or self-directed learning so can be defined as extension of it (Blaschke & Hase, 2015). It is clear that the pedagogy and andragogy are not able to meet the needs of the learners of twenty-first century especially in higher education. Since, it is easier to develop self-directed capability in learners and it requires minimum effort comparing to the previous steps of education (Patel, 2019). Up to higher education students should have learnt how to learn, in this way they can improve themselves to be self-determined learners.

This paper therefore has investigated the views of the administrator teachers who have been working in secondary education, on heutagogy. Their views are thought to give the readers an idea that whether teacher administrators in secondary education are aware of students' self-determined role on learning, or not. Since secondary education is the last step before the higher education and the readiness of students for the latter step depends on the perspective and practices of secondary school teachers. This paper is thought to light the new ways to new researches on how to find ways to implement heutagogy in education.

The literature on pedagogy, andragogy, heutagogy, PAH (Pedagogy-Andragogy-Heutagogy) continuum; purpose of the study; methodology used in this study; findings; discussion and conclusion are presented respectively.

Literature Review

Pedagogy

The term pedagogy roots from the Greek word '*paidagogos*' which means leader of a child (Knowles, 1973). It emerged in schools of monastery of Europe. Thus its assumptions were based on the observations of monks in teaching skills to children from 7th to 12th century (Holmes & Abington Cooper, 2000). By spreading of elementary schools in 18th and 19th centuries the assumptions of the monks were reinforced. By 20th century psychologists started to study the actions of children, which gave way to the concept of pedagogy (Knowles, 1980). By the arrival of educational psychology as a scientific branch in 20th century, scholars gave a new way to their research on reactions of children during systematic instruction. It was pedagogical model (Knowles, 1980). In recent years the term has been defined as 'art and science of teaching' (The Merriam Webster Online Dictionary, 2014). In traditional education, it is a well-known fact that teacher centered approaches are more popular than the learner centered ones (Hase, 2011). So in early ages of students, pedagogical models are rather preferable in traditional education.

Pedagogical models assign a duty to teachers because teachers are the ones who decide the way to teach. Therefore, the learners in pedagogical model are more dependent on the teacher and the subject matter. In pedagogy, curriculum is constituted by subjects. The learners are supposed to learn in an organized way; hence, they don't have right to choose the subjects according to their experiences

in learning process (Eryaman, 2010). Their motivation sources are extrinsic such as grades and passing the exams (Knowles, 1980).

In the midst of 20th century researchers started to interrogate the validity of pedagogical assumptions for adults. Since those assumptions could not fit the needs of the adult learners and the teachers of adults detected some trouble in the process (Knowles, 1980, Holmes & Cooper, 2000). In addition to this, pedagogy was a teaching theory including transmission of knowledge. Thus andragogy appeared as a new model which was a learning theory (McAuliffe, Hargreaves, Winter & Chadwick, 2009).

Andragogy

Via drastic cultural change occurred during the 20th century, knowledge accelerated. Thus education can no longer be defined as transmitting knowledge within formal settings. Instead it should have been defined as a life-long questioning and learning how to learn as a self-directed process (Knowles, 1980). Thus the new term 'andragogy' was defined by Knowles as '*helping adults learn*' stressing the difference between pedagogy and andragogy (Davenport, 1987). In this model teacher is just a facilitator who helps the learner become self-directed in the learning path (Darkenwald & Merriam, 1982) whereas the learners are active in their learning identifying and planning their needs and also knowing how they will be satisfied. The role of the teacher has also been defined as tutor and mentor in terms of helping learners become self-directed individuals (McAuliffe, et. al., 2009). Self-directed learning can be taken as an attempt to extend the definition of learning as acquisition of knowledge and skills. It emphasizes the learners as independent factors in the learning experience (Stephenson, 1994). Rachal (1983) also indicated that self-directedness is essential due to the nature of adult learning process.

Comparing to pedagogy, the role and responsibilities of learners have been increased in the learning process such as establishing proper conditions for learning; planning the process: identifying his/her needs and objectives to satisfy them; designing the learning environment with suitable materials; evaluating his/her learning experience and establishing new learning requirements under the guidance of a teacher (Holmes & Cooper, 2000). In andragogy, students are empowered, nevertheless it still has attributions of teacher-learner relationship (Davis & Hase, 2001), since teachers are the ones who still establish the curriculum and the related issues (Blasckhe, 2012). Knowles (1980) summarized the four key characteristics of the learners in andragogic model as follows:

- Independency or self-directedness
- Using past experiences to construct learning
- Association with readiness to learn and social roles
- Changing educational perspectives from subject-centered ones to performance centered ones.

In andragogy learners are not transmitted knowledge as it is in pedagogy; instead the concern is facilitating learning as an active process (McAuliffe, et. al., 2009). However, in 21st century the control of learning must be in power of learners themselves not the teachers (Hase & Kenyon, 2013). Although andragogy has facilitated and improved educational methodology it has still has associations of teacher-learner relationship (Hase & Kenyon, 2000). Thus there is a need to address the deficiencies of pedagogical and andragogical methods by an innovative approach which is heutagogy (Hase & Kenyon, 2001).

Heutagogy

As in the metaphor explaining by Davis and Hase (2001) learning is a river not a stable lake. Hence it requires dynamism and continuous innovation. To catch up with this swift change in every aspect of life, educational process should be regulated accordingly and new models should be examined and carried out. One of these new models is heutagogy discovered by Hase and Kenyon (2000).

Novak and Gowin (2004) claimed that educators should help people learning how to learn. However Davis and Hase (2001) supported the idea that people lose the ability to learn how to learn at the age of five by the starting of formal education. Until that age they question the universe as excellent learners. Then, they forget it through traditional education process. In the circumstances, people still need to learn how to learn. While andragogy (Knowles, 1980) meets the needs of the learners to a great extent; it has still some gaps in terms of self-determinism which is an essential skill in 21st century (Hase & Kenyon, 2000).

Self-determination is a theory of Deci and Ryan (2002) which encourage learners in the continuing way of self-development both autonomously and socially. In self-determined learning all of the responsibilities of learning process are belong to the learner including what should be learnt and how it will be done. The instructor provides guidance merely; learner is the one also responsible of the time of the learning (Blaschke & Hase, 2019; Davis & Hase, 2001; Hase, 2011; Hase & Kenyon, 2000). Hase (2011) highlighted self-determinism concept indicating the difference between simple changes in behaviors and having new experiences by questioning. By the help of the latter, individuals go on investigating the universe in terms of their needs and construct new knowledge via their experiences. In this cyclic process learners may change their directions and address new questions. Patel (2019) claimed that implementation of self-determined learning first required teachers' changing their teaching ways into the ongoing guidance, giving feedbacks, providing resources and supporting their students in their own learning experiences.

In pedagogical and andragogical ways learners may have necessary competences such as knowledge and skills. However having competencies does not mean that having capabilities which is also an essential 21st century skill (Hase & Kenyon, 2007; Stephenson, 1994;). There is a need to establish the understanding of developing capable people. It is up heutagogy's alley, since a heutagogical approach may develop capability as well as competency (Hase & Kenyon, 2001). Capability is the ability to take effective action in proper conditions; to learn from his/her experiences and to work collaboratively with others as well as autonomously (Stephenson & Weil, 1992). In other words, capability is the capacity to use the competence in both familiar and new contexts (Hase, 2011, Hase & Kenyon, 2013). Capable people usually have self-efficacy, creativity, team-work skills and positive values (Gardner et. al., 2007; Hase & Kenyon, 2000). In this context, personal values are also essential in heutagogical approach.

Double-loop learning and self-reflection are other key concepts in heutagogy emphasizing the importance of personal values and assumptions. In double-loop learning, learners are required to engage in the process not only behaviorally but also psychologically so that they can test their personal beliefs and assumptions. That is to say, outcomes of the learning would affect both the actions and belief systems of learners (Arygris & Schön, 1978 as cited in Blasckhe & Hase, 2015). As for Eberle (2009) in double loop learning individuals use their right brain thinking system which includes goals, values and beliefs in addition to left brain one. Schön (1984) named individuals who reflect in and on-action as reflective practitioners. They discover the importance of talking on learning and determining their learning preferences in heutagogical models (Canning & Callan, 2010). The learner should reflect not only what s/he has learned but also how to learn (Blaschke & Brindley, 2011).

Flexible curriculum and assessment are also other prominent issues of heutagogy. Since the students are both directors and actors of their own plays, they should know what to learn and how to assess their learning outcomes. Eberle (2009) stated that more flexible curriculums are essential in

self-determined learning. Since, without the help of teachers the students should determine what to learn and learning material. They should also interrogate the importance of the subject for their own learning scheme. Hase and Kenyon (2007) on the other hand supported flexible assessment for heutagogical practices. They reported that students feel much more comfortable and motivated if they take the responsibility of their assessment since the threatening instructor's control factor is not existed in the process any more. Nevertheless, the assessment should have some measurable instruments such as rubrics in which outcomes are determined collaboratively by students and teachers. Especially for the assessment of projects parameters may be identified by instructors but students should determine the scope and creativity regarding their needs. Peer assessment is also another way suggested in heutagogical settings (Eberle, 2009). Learning contracts are also preferable ways in heutagogical process (Hase, 2009). These contracts should be designed to reveal whole learning process and assessment in heutagogical practices. In other words they should define what and how to learn as well as what and how to assess (Kenyon & Hase, 2010).

In the light of the above mentioned, the major principles of heutagogy are identified in Figure 1.



Figure1. Major principles of heutagogy (by McAuliffe et. al, 2011).

PAH (Pedagogy-Andragogy-Heutagogy)

Considering all the concepts related to heutagogy, it can be summarized that learners are the independent ones who has the power of learning and determine the whole process (Blaschke & Hase, 2019; Hase & Kenyon, 2013). Learners cannot achieve the independent level easily. As it is mentioned it is a continuous process from pedagogy to andragogy and then heutagogy PAH continuum is the process defined from traditional to self-directed and finally self-determined one (Eberle & Childress, 2009; Luckin et. al., 2011 as cited in Blaschke & Hase, 2019). In this continuum learners develop their learning skills as independent agencies (Blaschke & Hase, 2019). PAH continuum is not a compulsory linear process. Thus mix use of each element is possible. According to Garnett and O'Beirne (2013) in this continuum the features of pedagogy, andragogy and heutagogy

can be utilized in a mixed way in terms of the requirements of students and learning. Blaschke (2012) added some aspects to the graphic designed by Canning (2010) and suggested that learners can move among the steps corresponding to subject matter or content as well as intellectuality of the learners.

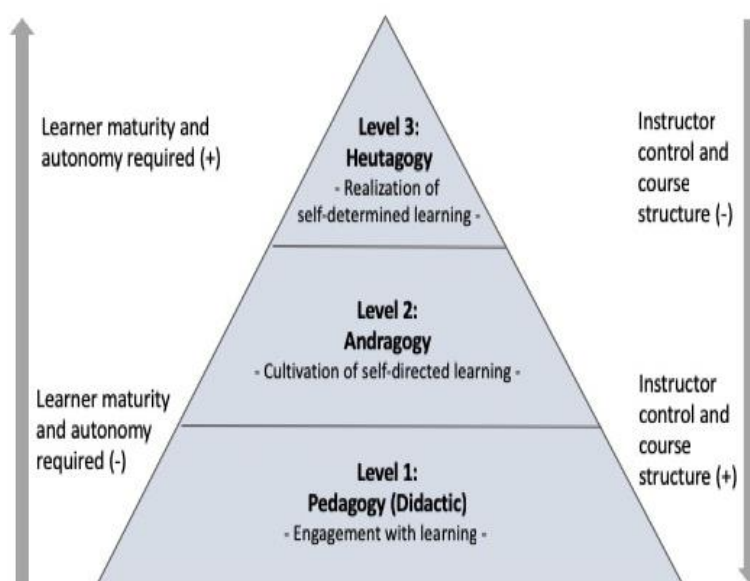


Figure2. Pedagogy-Andragogy-Heutagogy (PAH) Continuum (Blaschke, 2012, adapted from Canning, 2010).

Blaschke and Hase (2019) also commented on the continuum in the same vein. They reported that whenever learner requires moving among the elements in the continuum depending on the context, it should be possible. Therefore the process should be defined as a circular instead of linear one.

To summarize, learning has become more learner-oriented in 21st century. In Blaschke and Hase's words there is a 'revolution' in learning. Thus not only learners but educators also should admit the active role of learners in the education settings (2014). Furthermore, education should not be limited in traditional settings; instead, it should be ubiquitous and life-long. In the circumstances, educators of this era should also be aware of the innovative models in education such as heutagogy which empowers learners in the life-long learning path. Therefore the perceptions of teachers and administrators on this new model are important as they are one of the major stakeholders in the process. Teachers are the ones helping learners to discover their strength in their own learning journey. There are a number of applied researches on heutagogy and modern technologies (Canning, 2010; Canning & Callan, 2010; Car, Balasubramanian, Atieno & Onyango, 2018; Carpenter & Linton, 2018; Kapasi & Grekova, 2018) and review articles on the current issue (Agonács & Matos, 2019; Blaschke, 2012; Bozkurt, 2015; Davis & Hase, 2001; Halsall, Powell & Snowden, 2016; Hase, 2011; McAuliffe, et. al, 2009). However there is no research to address the perceptions of the teachers and administrators on heutagogy. The present paper is thought to fill the gaps in this field.

Purpose of the Study and Research Questions

Given the issue to be addressed mentioned above, this study investigated three research questions.

1. What are the perceptions of teachers (with administrative role) on heutagogy?

2. What are the perceptions of teachers (with administrative role) on practicality of this new model in education?
3. What are the recommendations of teachers (with administrative role) on the ways to implement heutagogy to education?

METHODOLOGY

The current research was conducted with a qualitative research design within phenomenological model. To explore the central phenomenon in detail qualitative researches should be utilized (Creswell, 2011). Thus to reveal the perceptions of teachers (with administrative role) on a relatively new term heutagogy, the current study was designed as a qualitative research.

Participants

The selection of participants was random. 40 teachers (with administrative role) as participants took part in the current study. They were all attending the Educational Administration master program without thesis in Firat State University, Elazığ, Turkey. All of the participants were male. %37.5 of the participants had 11-20 years of experience in teaching; %37.5 of them had more than 20 years in their teaching profession and % 25 of them had 1-10 years of experience. They all have been working in high schools.

29 of the participants were graduates of education faculties; whereas 11 of them of other faculties. In Turkey, graduates of other faculties also have similar rights as graduates of education faculties only if they have pedagogic formation certificate. However it is still a debatable issue that graduates of other faculties are competent enough in terms of educational issues as education faculties.

Table1. Features of Participants

Role in the Institution	Gender	Experience	Educational Background	Number	Percentage
Administrator/ Instructor	M	1-10 Years	Faculty of Education	8	%25
			Other Faculties	2	
Administrator/ Instructor	M	11-20 Years	Faculty of Education	9	%37.5
			Other Faculties	6	
Administrator/ Instructor	M	21-30 Years	Faculty of Education	12	%37.5
			Other Faculties	3	

Data Collection

The instrument of this study was interview forms prepared by the researcher investigating the related literature in detail. The researcher also consulted two professors in Education Faculty about the questions. Having their suggestions the form was revised. The forms were filled by the participants in a class hour time. The forms were prepared in mother tongue of the participants. Having a look at the questions nearly all of the participants notified that they have never heard heutagogy term before. Therefore the researcher explained the concept of heutagogy in detail to make it clear for them and emphasized that heutagogy approach is feasible for higher education. As they have been working in high schools and it is the last step before higher education, it is believed that they should be aware of the current approach to prepare their students for it. After the explanation, the participants answered the other questions easily.

Data Analysis

The written data were analyzed through qualitative content analysis. Content analysis is one of the ways that allows the researchers to expand the understanding of theoretical issues by extracting

written data into categories (Cavanagh 1997). Four main stages were followed as Berg (2001) recommended. The researcher identified the meanings first, included the content, identified codes as homogenous groups and lastly drew realistic conclusions by the help of calculated frequencies. To preserve the participants' privacy, codes were used to report their statements instead of full names such as P1-E-(15) and P3-O-(13). These codes stand for 1st participant graduating from an education faculty and having fifteen years of working experience and third participant graduating from other faculties having thirteen years of experience.

In qualitative researches validity and reliability are essential issues (Patton, 2002). Researchers should persuade his/her readers that the results of the study are worth paying attention to (Lincoln & Guba, 1985). To ensure validity for the current research the researcher explained the process, methods using in detail and gave direct quotations.

As for reliability, the researcher asked two professors of education faculty to read the answers and confirm the codes; identified the participants in the paper and preserved the data carefully. The forms were prepared and filled in Turkish as mentioned before. To provide reliability not only the researcher but two different English language instructors also translated the forms into English.

FINDINGS

Analysis of data revealed the perceptions of the participants on heutagogy, its practicality and ways to use it in education settings. The results of each research question were provided below.

RQ1. What are the perceptions of participants on heutagogy?

Regarding the first research question, an interesting finding was revealed. Thirty nine of the participants remarked that they have never heard the heutagogy term before. Just one of them (P2-E-(7)) stated to read about it in an article. In that case the researcher clarified the term in detail. Afterwards, most of them admitted that they knew the key terms related to the heutagogy concept such as knowing how to learn, self-determination, capability, double loop learning and self-reflection. However, they were not aware of its name and being a new approach in education.

RQ2. What are the perceptions of participants on practicality of this new model in education?

Findings related to the second research question were resulted into the categories and codes given in Table2.

Table2. Perceptions of Participants on Practicality of Heutagogy (N= 40)

Category	Code	F
Positive Attitudes	Practical for guiding teachers	21
	Practical for conscious students	21
Negative Attitudes	Negative impacts on teachers' role in classroom	16
	Negative impacts on the content of the course	12
	Negative impacts on assessment	8
	Having no idea	2

The analysis of data revealed two main categories for the second research question. In terms of positive attitudes toward the practicality of Heutagogy, two codes were identified. % 52.5 of the participants reported that heutagogical implementations are practical for teachers emphasizing if instructors adopt the role of facilitator and guide in their teaching profession. P17-O-(12) wrote "*If the teacher takes the role of guide in the classroom then heutagogical techniques may be applicable for the process. However we have to admit that most of the teachers prefer being an authority in the*

classroom and leading their students to what is right and easy for them. As you mentioned, it is not for high school students in traditional Turkish education system. However, as far as I observe higher education is a continuum of high schools and implementations are similar such as transmitting theoretical information in didactic ways.” Another positive view P11-E-(7) on this code is “We should be modern educators and help our students to be autonomous in their learning. Of course it is not easy to take a passive role in the classroom and make the students active and masters of their learning. However it is the only way to prepare our students for their future life.”

The other code of the category is its being practical for conscious students who know their competencies and limits. % 52.5 of the participants notified the importance of the conscious level of the students on practicality of the heutagogy approach. P21-O-(8) indicated *“I think it is up to the conscious level and competency of students. If they know about their abilities and competency then it is practical for them. Even being self-directed is not easy for our students, being self-determined is the highest level. Thus, a few students whom I know may utilize it during their learning process not most of them.”*

With regard to negative attitudes towards practicality of the present approach three different codes were labeled. % 40 of the respondents addressed the negative effects of being self-determined, capable and self-reflective autonomous learners on the authority of teachers in the classroom. A very experienced teacher P32-E-(27) indicated his view on the issue in a strongly negative way as *“I think that our students are not ready for this approach. If we help them have the freedom in their learning you mention, then how about teacher authority in the classroom? Personally I do not want anything to weaken my strength in the classroom.”* A milder view on the issue is P19-O-(22) *“In my opinion, all of the teachers know that students had better be empowered in their learning process in 21st century. Yet, we still have a relatively traditional education system which authorizes teachers. Thus it is not proper to give a full freedom to students in their learning path. They need us. And it will be the same in the future.”*

% 30 of the participants stressed the estimated negative influences of heutagogical approach on the course contents. They generally reported the possible negative impacts of being self-determined about what and how to learn on the course contents. A teacher P3-E-(20) stated *“Secondary education in Turkey is severely curriculum based. Program designers determine what and how to learn according to students’ needs. So our students are also accustomed to be directed by a curricular system. Graduating from secondary education, students are not easy to change their way of learning and to have all the responsibilities of learning. Therefore they remain passive recipients in higher education as they were in the previous step. Supposing that they are given the chance to determine about their learning, in the latter step, it will most likely affect the content of the courses. They may not determine what to learn correctly, since they are not aware of their needs and requirements of their future career.”*

% 20 of the teachers reported their negative perceptions about assessment process in heutagogical approach. They generally wrote about the possible ambiguity in assessment process in heutagogical way. They mostly discussed the measurability features of heutagogic assessment. P6-E-(18) preferred asking question to the researcher indicating his doubtful manner *“How does a student assess himself if he is the only one to determine what to learn? And is this kind of assessment valid and reliable? How can teachers monitor the improvement of students in case they are not competent enough on the issue his/her student prefers to study and learn?”* Another participant also wrote his views in a similar questioning way: P29-O-(13) *“Assessment process should be determined and controlled by instructors not students. Otherwise, how can it be in line with the other students? Some of them can assess themselves honestly and strictly but is it the same for all of the students? Control is obligatory in education settings.”*

Two out of forty participants indicated having no useful ideas about the practicality of the current approach.

RQ3. What are the recommendations of participants on the ways to implement heutagogy to education?

Findings related to the third research question were resulted into the categories and codes given in Table3.

Table3. Recommendations of Participants on Heutagogical Models

Category	Code	F
Changing the Way of Teaching	Reduction in level of authority/being guide on the side	24
	Utilizing more student-centered methods	18
	Being reflective teachers	12
	Letting them aware of themselves/Knowing how to learn	19
Coaching Students	Letting students use complex thinking systems	14
	Improving the level of problem solving skills	9
	Improving the level of reflective thinking	8
	Blended Learning	12
Technology Integrated Teaching	Social Media	10
	Having No Idea	13

Asking the participants about the possible ways in education settings to facilitate heutagogical models, three categories were attained. Within the framework of the first category ‘Changing the Way of Teaching’ four codes were identified. % 60 of the respondents admitted that authoritative role of teachers in the 21st century should be changed into guide and facilitator teachers. One of the teachers commented as P7-E-(8) *“As traditional teachers we feel ourselves comfortable and superior in the classroom. We have the power in the classroom indisputably. However in 21st century, we have to keep up the change, thus, we have to break the habit of being the sole authority in the classroom.”* The participants mentioned the necessity of giving responsibility of learning to learners within the same code. P11-E-(7) stated, *“Change is inevitable. As educators we also change our responsible manner and give all the liabilities to the learners. They should be active and responsible during their life-long way. As it is mentioned, education is not limited to the school settings, so, if the learners have their responsibilities their way will be smooth and full of success.”* % 45 of the teachers noted the need of using student-centered methods in the classrooms in terms of heutagogy. P24-E-(8) reported *“Useful projects should be utilized in various disciplines. Learning via projects makes students active and self-determined if the instructor gives all the responsibility of the project to the student.”* P10-E-(10) *“Problem based learning may be used in education. Giving a problematic case to the students and making them creative and autonomous problem solvers is one of the ways.”* P33-O-(20) *“I think techniques requiring collaboration can make students autonomous within the group. Group works should be one of the ways making students self-determined in the classroom.”* % 30 of the respondents referred to the need of being reflective teachers. P16-E-(9) stated *“Only if we transform ourselves to the reflective teachers we can interrogate our teaching and find the right way. So it is essential to be reflective teachers to be aware of ourselves and then help our learners in their learning way.”*

As for the second category ‘Coaching Students’, four codes were formed. In the general framework of guiding and helping students find their way, the first code ‘letting them aware of themselves’ was formed by %55 of the participants. Commenting in this manner P39-E-(9) expressed *“Letting students find their right way to learn is the best help. If they become autonomous learners in higher education, we teachers, should help them find themselves. So they can go on learning without needing assistance.”* %35 of the teachers claimed that helping students have a complex thinking system is the best way for heutagogical approach. P40- E- (23) noted *“Students should use not only knowledge, comprehension and understanding levels but analyzing, synthesizing and evaluating steps are necessary as well. They are not easy to develop, they require time and efforts. However they are*

not impossible to have. If teachers guide students finding their ways and so having high level of thinking system, they can adapt new approaches such as heutagogy.” % 22.5 of the respondents put emphasis on improving problem solving skills of students. P33-O- (20) indicated *“Students should solve both team and individual effort problems logically and creatively. It means in an educational environment there should be both team and individual works which requires logic and imagination. Students should be motivated to solve all of the problems in a flexible manner. So they may be ready for not only familiar but also new cases in their future life.”* % 20 of the teacher administrators remarked the reflective thinking skills of students as an important factor. P4-E-(13) stated *“Teachers should guide their students to question their aims and values. If they become reflective learners they may find their best way to learn and lead their own learning and do not need any assistance.”*

The last category of the third research question is Technology Integrated Teaching. Within this category two codes were comprised. To liberalize students in their learning life, technology integrated ways were offered. The suggestion of the %30 of the participants is using blended learning in higher education. P27-E- (16) claimed *“Technology should be integrated into the education system in 21st century. I cannot imagine a teacher who is not able to use technology effectively for the sake of students. Teachers should know how to use technology and how to integrate it to their teaching. By this way students will be accustomed to use technology for their learning process. There is a new trend as blended learning. In traditional secondary state schools we cannot use it. However in higher education professors and students may utilize it. And students become more independent. Instructors may prepare videos on various topics. Students may prefer what, when and where to watch them.”* % 25 of the respondents offered using social media to decide what to learn. P5-E- (10) stated *“It may not be convenient for secondary education. In secondary education we have to follow a curriculum and students need our assistance to learn. They are not ready to be independent in this stage. However the case is not same for higher education. In higher education students are more mature and ready to be an autonomous individual in their own learning. For instance, in higher education students may choose what to learn following well-known professors in social media. They may make their preferences according their needs and interests. Since, they have a sufficient background to be an independent learner.”*

DISCUSSION

Although there are a number of papers and books on heutagogy as a new approach in various disciplines (Bhoyrub, et al., 2010; Blaschke & Hase, 2015; Blaschke & Hase, 2016; Canning, 2010; Canning & Callan, 2010; Eberle, 2009; Garnett & O’Beirne, 2013; Hase, 2009; Hase & Kenyon, 2001; Kenyon & Hase, 2002; Kerry, 2013; Narayan & Herrington, 2014) and its implementations (Ashton & Elliot, 2007; Carpenter & Linton, 2018; Cochrane et al., 2012; Hase, Tay & Goh, 2006; Narayan, 2017) the familiarity of the term in traditional education settings and perceptions of teachers on this term have not been previously addressed. This research fills the gap in the field by reporting on the perceptions of teacher administrators regarding the heutagogy. All of the participants except one, admitted not to hear this term before. It is a notable fact that all of the participants were attending master degree courses in Faculty of Education but were not aware of a relatively new concept in the field. Therefore the answers to the first question were not satisfactory with regard to 21st century requirements. It may be interpreted as heutagogy has not been sufficiently introduced to educators or educators in Turkey do not follow the novelties in their fields. The previous prediction is more possible, since nearly all of them has declared being aware of the terms pedagogy and andragogy.

Regarding second research question, two general categories were composed. ‘Positive Attitudes’ category was attributed more than ‘Negative Attitudes’ category. The categories may firstly be discussed in terms of experience and faculty of graduation. Although more of the participants declared their positive views on the practicality of the current term negative views were also in considerable amount. For the positive attitudes category total frequency value was f=42. When examined regarding with experience, the participants wrote in this category were relatively young teachers. 21 teachers who declared positive opinions were in between 1-20 years of experience. As for faculty graduation, 12 teachers were graduates of education faculties. Regarding with the negative

attitudes category, the findings indicated the same vein ($f=36$). 12 out of 16 participants were in between 20 and 30 years of experience. In terms of faculty education, 10 out of 16 teachers were education faculty graduates. Observing these variables it can be inferred that young teachers independent from faculties are open to change. They are more adoptable than older teachers for new implementations and opinions. This finding of the study appears to be in line with the research that supported young teachers were more enthusiastic about change than their older colleagues (Hargreaves, 2005). Faculty graduation has no importance, because positive and negative viewers were in the similar rates of faculties. (Positive views% 57.5 education faculties; negative views %62.5 education faculties) Our finding aligns with some researches which investigated the difference between attitudes of education faculty graduates and other faculty graduates who have pedagogic formation certificate toward teaching practices in various disciplines (Bahçeci,Yıldırım, Kara & Keskinpaltı, 2015; Bozkırlı & Er, 2011; Ocak & Demirdelen, 2008).

Furthermore for the second research question, there are 16 views out of 36 negative ones related to the authority of teachers and 12 to the content of the course. It can be inferred from this result that teachers still accept authoritative theories in their teaching and they strictly adhere to the curriculums as in traditional pedagogy model. Ashton and Elliot (2007) stated that global learners should catch up with the swift change and it is not possible by traditional pedagogical models especially in higher levels of education. As McAuliffe, et al. (2009) reminded their readers that theories should not be static in a rapidly changing educational system. Thus educators should move on more student-centered learning models from teacher-centered teaching ones. However they admitted in line with our finding that instructors even in higher education cannot implement andragogical and heutagogical principles in their teaching, instead, they prefer reverting pedagogical models. Moving towards andragogy and heutagogy is a challenge for educators, because transmitting knowledge is still more comfortable even in 21st century.

‘Negative impacts of assessment’ is the last code for negative attitudes category. Negative impacts of heutagogical assessment are emphasized by eight teachers. They traditionally thought that assessment should be done under the strict control of teachers. Otherwise it does not work effectively. In fact, assessment in heutagogy is thought to be flexible and student-directed (Eberle, 2009; Hase & Kenyon, 2007; Hase & Kenyon, 2010). It can be commented that some of the teachers are still dissenter towards the novelties in the system. They still think that assessment particularly, should not be transformed to student-determined ones. This finding of the research is similar to the views of McAuliffe, et.al (2009). They expressed their view about heutagogical teaching as a challenge for teachers.

In respect to the third research question, three useful suggestion categories were formed. They are ‘Changing the way of teaching’, ‘Coaching students’ and ‘Technology integrated teaching’ respectively in terms of the calculated frequencies. It should be noted that the answers of this category are given mostly by the positive attitude teachers and some of these participants wrote more than one suggestion.

As for the first category, 24 views were coded on altering teachers’ role to guide; 18 ones on using student-centered methods and 12 views on being reflective teachers. It means % 60 of the participants thought the best way to implement heutagogy in education settings was changing from authoritative teachers to facilitators. This finding appears to be consonant with the views utilized to write this paper (Hase & Kenyon, 2000; Davis & Hase, 2001; Eberle, 2009; Hase, 2011; Blaschke, 2012; Blaschke & Hase, 2019; Patel, 2019). It can be inferred that having positive attitudes toward the heutagogical implementations teacher administrators suggested being guide in the modern classroom as characterized by heutagogy. They reported that modern teachers should not be ‘*sage on the stage*’ as King (1993) referred to the traditional teachers who simply transmit knowledge to the brains of students like pouring into empty vessels. Instead teachers had better facilitate the learning letting their students to be full responsible of their learning. Blaschke (2012) emphasized the fact that teachers had better give the ownership of learning to the learners themselves.

18 views were recorded for the code of 'utilizing more student-centered methods'. The participants generally stated that students should be engaged in their own learning process via student-centered methods such as projects, problem based learning and collaborative group works. Project-based learning has a lot of definitions. One of them has all the major qualities of heutagogy given by Moursund (1999) such as teacher guiding not direction, individual content, and assessment. As for Bell (2010) it is a student-centered rather than teacher-directed approach. By looking at these qualities it can be indicated that projects are convenient tasks in heutagogical approach. Eberle (2008) claimed the use of projects in heutagogical learning environments were beneficial. The researcher thought students will be done more work and progress by the help of projects. David and Hase (2002) and Hase (2009) recommended utilizing team-works in learning environments. Canning and Callan (2010) also declared that collaboration is an essential element in heutagogical methods. When learners work together they may reflect and it may help them to think about how they learn better. In the research of Ashton and Elliot (2007) the initial finding supported the idea of collaboration in heutagogical learning environment.

%30 of the respondents mentioned about the necessity of being reflective teachers in heutagogical education. It is clear that participants who made comments about teachers' reflectivity as a useful way for heutagogy, believed the necessity of teachers' changing through traditional sages to self-confident guides. Reflective teachers are the ones who reflect on their experiences and learn from them continuously for their professional development (Henderson, 1992). At first glance, this finding may be seen as an irrelevant suggestion for a student-centered learning theory. Since the researches on the relevant field reveal the need for reflective students and process (Ashton & Elliot, 2007; Ashton & Newman, 2006; Canning, 2010; Singh, 2003; Wenger, 2002). However some other researchers (Schugurensky, 2002; Mezirow, 2003) in line with the current finding, claimed that both instructors and learners needed to be reflective to provide an effective learning community. So it may be inferred that if the teachers are eager to question themselves, challenge in the process and seek out opportunities for their students then learning environments will be better places in terms of heutagogy. 12 of the respondents thought in the same vein and suggested being reflective teachers in the process to make the learners more autonomous and self-determined.

In terms of 'coaching students' category four codes were formed. First of all, %47.5 of the participants noted that letting students know how to learn was the best way in heutagogical approach. Aforementioned in the paper, knowing how to learn is one of the prominent features of heutagogy (Argyris & Schön, 1978, as cited in Hase, 2009; Blaschke, 2014; Canning & Callan, 2010; Hase, 2009; McAuliffe, et. al., 2008). The researchers supported the necessity of knowing how to learn for different aspects of heutagogy. As for Argyris & Schön (1978), it was for double-loop learning; for Hase (2009), it was essential for reflective practice; For Canning and Callan (2010), it was important for collaborative learning and for McAuliffe, et.al. (2008) it was for being more self-determined learners. As seen, the present finding of the research is harmonious with the others in terms of having the self-knowledge of learning.

%35 of the respondents recommended helping students use their high level of thinking systems. Heutagogy has been viewed as the self-determined learning process challenging the traditional transmitting knowledge issue. Therefore students need to construct their knowledge in an analytical, evaluative and synthesizing way (Blaschke & Hase, 2015; Crawford, Young Wallace & White, 2018).

%22.5 of the teacher administrators suggested improving the level of problem solving skills of students to comply with heutagogical approach. To become life-long and capable learners, individuals should also have the ability to solve problems to cope with familiar and new cases (Cordon, 2015; Eberle, 2009; Gerstein, 2014; Hase & Kenyon, 2003; Riedler & Eryaman, 2016). Therefore this finding may also be taken as one of the useful ones in heutagogical learning. To improve the problem solving skills of students facilitates them to be adapted new circumstances not only in their educational but also working life. According to Blaschke (2014), employees are required to have 21st century skills such as problem solving, creativity, innovativeness and some cognitive/metacognitive skills.

%20 of the participants particularly emphasized the reflective thinking as a requirement for heutagogical practice. As discussed within the previous category, reflective thinking is one of the prominent features of heutagogy. And so many researchers are in the same idea of the necessity of reflective thinking regarding with students and the learning process (Ashton & Elliot, 2007; Ashton & Newman, 2006; Canning, 2010; Singh, 2003; Wenger, 2002).

The last category of the third research question is 'Technology Integrated Teaching'. %55 of the participants recommended utilizing technology to be heutagogical learners. 2 different codes were labeled within this category. The first one recommended by 12 respondents is using blended learning. This finding aligned with the research by Ashton and Elliot (2007). They also proved that blended learning was an effective and enjoyable way in heutagogical learning although it had some challenges for both learners and educators. Singh (2003), Canning (2010), Ashton and Newman (2006), Narayan and Herrington (2014) are the other researchers thought that blended learning is one of the main tenets of heutagogical approach. It may be as a result of the fact that blended learning provides learners a more independent environment to be self-determined ones. Since, the high quality of experiences may be attained through information and communication technologies rather than traditional methods used in the classrooms (Williams, 2002).

%25 of the teacher administrators suggested using social media as an effective tool for heutagogical learning. The last finding of the current study was in line with a number of researches (Blaschke, 2012; Blaschke, et.al, 2010; Junco, Heiberger & Loken, 2010; Naqvi & Parvez, 2019; Narayan, 2017). A study showed that students who used social media such as Twitter had more active role in their learning process comparing to the ones who did not use it (Junco, et.al., 2010). Others remarked that if the learners generated their content by use of social media it would help the development of cognitive and metacognitive skills (Blaschke, et. al., 2010). The other researcher declared in his thesis that social media was one of the useful tools to change traditional pedagogical approach (Narayan, 2017). One of the latest researches also indicated that the use of social media supported self-determined learning (Naqvi & Parvez, 2019).

CONCLUSION

There is a revolution in learning and it affects the whole education system inevitably (Hase & Blaschke, 2014). In other words in a world of swift change of information every particle belonging to the system will be affected and changed accordingly. To keep up with the change in education, individuals need to transform from traditional to more modern ones. Therefore educators and learners should adapt new approaches and methods open-mindedly. According to Blaschke and Hase (2015) there is a need for life-long and capable learners to cope with the rapid change in 21st century.

Heutagogy is one of the innovative ways evolving learners '*from passive recipients to analysts and synthesizers*' (Blaschke & Hase, 2015) as an extension of pedagogy and andragogy (Hase & Kenyon, 2001). As Patel (2019) suggested the use of heutagogy in higher education is more convenient for students. Therefore the readiness of students for higher education and heutagogy is an important issue for high school teachers and administrators. To reveal the perceptions of teacher administrators on heutagogy/self-determined learning, the current research was conducted. The participants reported their views on heutagogy, its practicality on educational environment and recommendations for heutagogical implementations.

As a conclusion, it may be reported that teacher administrators were not sufficiently aware of the innovative approaches in education. Even if they did not know the name of the approach as heutagogy they knew the related issues such as self-determinism, life-long learning, capability, double-loop learning and self-reflection. Thus they gave useful opinions about the practicality of the issue and some recommendations as well as some negative ones. While there were a number of participants who believe the necessity to make the learners active leaders of their own learning; some of the respondents still supported teacher centered approaches in spite of the fact that they knew the requirements of the 21st century. It can be inferred that some teachers still have a tendency to be the

authority in the classroom and reject using learner-centered approaches. However the critical majority support the necessity of utilizing more student-centered ways in educational settings.

All in all, heutagogy as an innovative approach in 21st century, should be introduced to educators and students much more than today. Since not only educational but also technological developments empower the learners. The education process as Davis and Hase (2001) explained with a vivid metaphor was like a dynamic river rather than a stable lake. So, if educators really want to help learners to keep up with the 21st century requirements of education, they should follow and adapt the innovations.

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