

## Analysis of the Attitudes of Physical Education Teachers towards Gifted Education According to Certain Variables

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### Abstract

The purpose of this research is to identify the attitudes of physical education teachers regarding the education of gifted students. Physical education teachers working in Kırşehir province participated in the research on a voluntary basis. Sample selection is not made. Measurement tools were delivered to all teachers, but data collected from 91 teachers were processed. Relational screening method was used in this research. "Personal Information Form" and "Attitude Scale for Teachers on Gifted Education" were used in the data collection process of the research. Testing of the research data was performed at 0.05 significance level. In the analysis of the data, the items pertaining to the sub-problem were grouped and independent t-test and ANOVA techniques were used together with descriptive statistics such as frequency (f), percentage (%), weighted average ( $\bar{X}$ ) and standard deviation (SD). Cohen's d and eta-square ( $\eta^2$ ) were used to calculate the effect size of the significant difference. Research results showed that the attitudes of physical education teachers towards gifted education are highly positive in general. The attitudes of physical education teachers towards gifted education significantly differ according to the variables of department of graduation and years of service in the dimension of resistance to objections. However it was determined that there was statistically no significant difference concerning the variables of gender, type of school served and years of service.

**Keywords:** Physical Education Teacher, Giftedness, Attitude, Gifted Education

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## INTRODUCTION

Throughout history, gifted individuals have pioneered the development of societies, innovations and inventions that shaped the world (Akar, 2004). This process predicts the fact that gifted individuals will affect societies and the world in the future as they did before. It is very important for societies to discover, educate and increase their potential by meeting their education needs at the highest level in order for bringing inventions and innovations for the benefit of humanity (Şenol, 2011). Numerous factors are important in the creation of these trainings (Bildiren and Kargın, 2019). An important basis for these factors is special education (Bildiren and Kargın, 2019). For these reasons, Stuart and Beste (2008), reported that meeting the education needs of gifted individuals through special education is indispensable for the development of countries and the world.

Along with the individual characteristics of gifted individuals, having a knowledge about their background has been instrumental in the formation of special education programs (Öznacar and Bilan, 2012). From this point of view, the origin of the definition of gifted and talented ability is based on the definition and categorization of intelligence. In his study categorizing intelligence conducted in early 19<sup>th</sup> century, Terman described individuals with an IQ above 140 as genius (Terman, 1916). There are numerous definitions and classifications in the literature (Sak, 2009), but these definitions have differences. However, the characteristics of gifted individuals are similar to each other in all intelligence definitions (Kurnaz, Tüybek, Taşkesen, 2009). In our country, Turkish Ministry of National Education [MEB] defined gifted individuals as individuals with IQ level above 130 along with intelligence, creativity and leadership capacity (MEB, 2017). Sak (2011) stated that gifted individuals exhibit more sophisticated behaviors as compared to their peers. Discovering the talents of gifted individuals and directing them in the right way can only be achieved through the education provided to gifted students. It is only through education that the abilities of gifted individuals are explored and they are accurately guided, which ultimately develops their characteristics and increase their skills.

Maker and Nelson (1996) emphasized that the education provided to gifted individuals should be systematic and orderly, and that the gifted individuals, who exist in a limited number among societies, should not be lost and raised efficiently. The most important element of such education is teachers. In addition to developing programs of gifted individuals, teachers, who are the practitioners of the program, play an important role also in the achievement of the goals and desired behaviors (Shaughnessy ve Sak, 2009).

Lewis (1982) emphasized that teachers employed in gifted education should also be talented and open-minded individuals. In addition to being talented, teachers should be experienced, have subject matter knowledge on gifted individuals and have a positive attitude to deliver this body of knowledge (Tortop and Kunt, 2013).

Attitude is the mental, cognitive, affective and behavioral predisposition that a person develops based on his/her feelings and motivations towards himself/herself and the happenings in his/her external world (İnceoğlu, 2011). Teachers have an essential role in acquiring the attitude, which is the mood that directs the behavior of individuals. The most important element that stands out in terms of the quality of the gifted education is the quality of the teacher. There are multiple studies in the literature indicating the significance of the teacher in gifted students' displaying their talents in a correct way (Gerow, Bordens and Blanche-Payne, 2007; Neumeister, Adams, Pierce and Cassidy, 2007; Dağlıoğlu, 2010; Güneş, 2015; Metin, Şenol and İnce, 2017).

Along with other lessons, physical education lessons are important as well in educating gifted and talented individuals in accordance with their abilities. Physical education helps the individual to be mentally and physically healthy through physical movement (Tamer and Pular, 2001). Today, not only muscular and physiological development, but also cognitive, affective and psychomotor development of the individual are considered within the scope of physical education (Demirhan, 2002). Because physical education lessons help the individual to enhance self-confidence, cope with stress, and get rid of anxiety and depression (Morgan, Saunders and Lubans, 2012). This aspect of the

physical education course, which addresses the cognitive characteristics of students, is important for gifted students to become aware of their own abilities and to use their abilities effectively. Physical education teachers help gifted and talented students discover their talents and use them correctly through the education they provide. In this education process, the attitudes of physical education teachers towards gifted individuals are important. Therefore, the level of attitudes of teachers involved in the education of gifted students should be determined (Davis and Rimm, 2004).

In Turkey, there are a limited number of studies researching teachers' attitudes regarding gifted education. An attitude scale adaptation study on the education of gifted students was carried out by Tortop (2012). The data obtained as a result of this study was considered appropriate to measure the attitudes of Turkish teachers towards the education of gifted students. Several studies investigating the attitudes of preservice teachers towards gifted education have been found in the literature (Metin, Şenol and İnce, 2017; Yıldırım and Öz, 2018; Uçar, Yıldizer, Özböke, Yılmaz and Kocaekşi, 2019; Ergun and Çetin, 2019). In addition, it is seen that there are studies examining the attitudes of primary school teachers (Tortop & Kunt, 2013; Sönmez, 2017) and classroom teachers (Güneş, 2015; Kaya, 2019) towards gifted education. Examining the studies conducted abroad, it was observed that Begin and Gagne (1994) identified 50 different variables that affect the attitudes of gifted individuals. In a different study, Michener (1980) examined the relationship between the educational program for gifted individuals and the attitude. In another study, Gagne and Nadeu (1985), examined the relationship between different artistic activities and the attitude.

When the literature is explored, it is seen that studies on attitudes towards physical education and sports mostly consist of studies on attitudes of teachers and preservice teachers towards physical education, attitudes of students at sports departments towards sports, and attitudes of middle and high school students towards physical education (Toprak and Saraç, 2014; Keskin , Öncü and Kılıç, 2016; Kılıç, Uğurlu and Cenik, 2018; Yavuz and Yücel, 2019; Caz, Bıçakçı and Nakipoğlu, 2019; İnan, Varol, Çolakoğlu and Çolakoğlu, 2019). Examining general results of these studies, it is observed that the attitudes of the gifted students differ and are affected by different variables.

In addition to the limited number of studies on physical education teachers' attitudes towards gifted individuals, this study is expected to contribute to the literature with its results and suggestions to be made based on those results.

In this context, it was aimed to describe the attitudes of physical education teachers towards the gifted students. In line with this aim, answers were sought for the following questions.

How are the attitudes of the physical education teachers towards the gifted students?

Are there any significant differences among the attitudes of physical education teachers concerning certain variables such as gender, school type, professional experience, and branch of graduation?

## METHOD

Relational screening method was used in this research. Relational research is defined as a research model that aims to determine the likelihood and the level of the relationship between two or more variables as they are, without manipulating the variables (Fraenkel, Wallen & Hyun, 2015; Büyüköztürk, Çakmak, Akgün, Karadeniz and Demirel, 2016). Screening model studies are a research approach that aims to describe a past or a present situation as is (Karasar, 2005). Relational screening model enables to observe the effects of independent variables that are considered to be effectual on the variables identified. In this context, it is aimed to identify the attitudes of physical education teachers towards gifted education in the first part of this study. In the second part of the study, the effects of the variables of gender, type of school served, years of service and the department of graduation, which are considered to affect the attitudes of physical education teachers towards gifted education, were examined.

## Sample of the Study

Physical education teachers working in Kırşehir province participated in the research on a voluntary basis. Sample selection is not made. Measurement tools were delivered to all teachers, but data collected from 95 teachers were processed.

The number of physical education teachers working in Kırşehir province and its districts in 2019-2020 academic year is 120. The final state of the demographic information of the physical education teachers who took part in the study sample is as follows; 26.3% (n=25) of the study sample are female and 73.7% (n=70) are male teachers. 57.9% (n=55) of teachers work at secondary schools and 42.1% (n=40) work at high schools. 27.4% of the teachers (n=26) have 1-5 years, 38.9% (n=37) have 6-10 years, and 33.7% (n=32) have more than 11 years of service. 86.3% (n=82) of the teachers graduated from the department of physical education, 13.7% (n=13) graduated from other departments.

## Data Collection Instruments

In the research, two measurement instruments were used in the data collection process. In the first stage, the *personal information form (PIF)* developed by the researcher was used to specify the personal information of physical education teachers. In the second stage, "Attitude Scale for Teachers on Gifted Education" scale for teachers, developed by Gagne and Nadeau (1985) and adapted to Turkish by Tortop (2014), were used to identify the attitudes of physical education teachers towards the education of gifted students.

*Personal Information Form (PIF)*. In this form prepared by the researcher, there are several independent variables that are considered to be effective on the attitudes of physical education teachers towards gifted education. These variables addressed demographic information (gender, school type, years of service, and department of graduation) of physical education teachers in general and the data were included in PIF as classifying questions.

*Attitude Scale for Teachers on Gifted Education*. It was developed by Gagne and Nadeau (1985) in order to measure teachers' attitudes towards gifted education. The scale, adapted to Turkish by Tortop (2014), consists of 3 dimensions, 14 items and includes a 5-point Likert scale ("1" Completely Disagree, "2" Moderately disagree, "3" Undecided "4" Moderately agree, "5" Completely agree). *Need and Support Dimension* consists of 7 items (items 5, 6, 7, 8, 9, 13, and 14), *Resistance to Objections Dimension* consists of 3 items (items 2, 3, and 12) and *Ability Grouping Dimension* consists of 4 items (items 1, 4, 10, and 11)

Considering the meaning and language validity, the scale was translated from English to Turkish by 10 linguists. All of the linguists examined the translation texts in detail and the Turkish text was prepared that best represents each item. During the scale adaptation studies, in order to determine whether the items in the translated version are equivalent with the original form, 5 specialists, who are experts in the field of gifted education with a good command of English, were asked to review. The original scale and the translation version were given to the specialists, and they were asked to score between 0 and 10 (0= not suitable at all, 10 = completely suitable) to assess the suitability of the items of the scale. There was a 91% harmony among the opinions of experts. Subsequently, the Turkish form was translated back into English by two linguists, who know both languages well, and it was evaluated whether this translation was similar to the original scale. Since there was no negative feedback after expert assessments, the scale was applied to 347 teachers for validity and reliability tests. AMOS program was used for confirmatory factor analysis. Covariance matrices were used for the tested model, and compliance statistics and modification results were examined in the CFA. For the model obtained in the study, it was determined that  $\chi^2=235.7$ ,  $DF=74$ ,  $p=0.000$ ;  $\chi^2/DF=3.19$ ;  $NFI=0.802$ ;  $CFI=0.853$ ;  $GFI=0.911$ ;  $RMSEA=0.079$ ;  $PCLOSE=0.000$ . The Cronbach Alpha internal consistency coefficient was examined to investigate whether the scale was reliable. The Cronbach

alpha reliability coefficient of the scale was found to be 0.801, dimension of needs and support of the gifted: 0.724, the dimension of resistance to objection:0.614, and ability grouping:0.749.

### Collection and Analysis of the Data

Measurement instruments were delivered to all teachers via social media and/or mail addresses as part of the research. 2 of the measurement instruments were not evaluated due to improper coding, empty form etc., and 23 of the teachers did not provide feedback at all. The data obtained from a total of 95 physical education teachers were evaluated. The measurement instruments were filled out on a voluntary basis. The data obtained was uploaded to SPSS 20.0 (Statistical Package for Social Sciences) software for analysis. The research data was tested at 0.05 significance level. The parameters used in the analysis of the descriptive data obtained are frequency (f), percentage (%), weighted average ( $\bar{X}$ ) and standard deviation (SD). Ultimate checks were made on the data prior to applying relational statistics methods, the homogeneity of the data was reviewed with respect to whether it displayed normal distribution or not. The findings regarding the normal distribution of the data are given in Table 1.

**Table 1 Normal Distribution Findings**

			$\bar{X}$	Median	Mode	Skewness	Kurtosis
	GENERAL	Statistics	3.50	3.42	3.00	-.207	.577
		Standard error	0.073			.247	.490
Attitude Scale for Teachers on Gifted Education	Need and Support Dimension	Statistics	3.51	3.57	3.71	-.502	-.141
		Standard error	0.088			.247	.490
	Resistance to Objections Dimension	Statistics	3.60	3.66	4.00	-.638	.240
		Standard error	0.099			.247	.490
	Ability Grouping Dimension	Statistics	3.40	3.50	4.00	-.225	-.569
		Standard error	.097			.247	.490

According to Büyüköztürk (2014: 40), the essential point in the analysis is that the scores do not deviate excessively from normal. The skewness coefficient ranging within the limits of -1 and +1 can be interpreted as the lack of a significant deviation from the normal distribution. According to George and Mallery (2010) and Blest (2003), however, the skewness and kurtosis values remaining between +2 and -2 are sufficient for the normal distribution of the data. Considering the skewness (-.207) and kurtosis (.577) values of the attitude scale for teachers on gifted education, it is seen that the data displays normal distribution.

In line with this results, parametric tests were used in the analysis of the research data. In this context, independent t-test was used to analyze the attitudes of physical education teachers towards gifted education according to paired observable variables, and one-way analysis of variance (ANOVA) was used to analyze according to three and more porous variables. Another statistic used in the interpretation of test results is the effect size. The two most frequently used effect size statistics are eta-square ( $\eta^2$ ) and Cohen's d statistics. The values that are interpreted as small, medium and large effect sizes are 01, .06 and .14 for eta-square; and .2, .5 and .8 for Cohen's d, respectively (Büyüköztürk, 2014: 44). Cohen's d coefficient was used to calculate the effect size of the significant difference in independent t-test results; while the eta-square correlation coefficient was used to calculate the effect size of the significant difference in the ANOVA results.

The answers given by the physical education teachers for the questionnaire items were on a five-point Likert scale, and the formula used to determine the group value ranges for the assessment scale was "a = Range / Number of Groups to be Formed" (Taşdemir, 2003). Accordingly, the assessment scale is as follows;

**Table 2 Scale Scores - Assigned Weights - Qualification Groups**

Attitude Scale for Teachers on Gifted Education		
Assigned Weight	Qualification Groups	Range
5	Completely Agree	4.20-5.00
4	Moderately Agree	3.40-4.19
3	Undecided	2.60-3.39
2	Moderately Disagree	1.80-2.59
1	Completely Disagree	1-1.79

## FINDINGS

### Findings on Attitudes of Physical Education Teachers on Gifted Education

**Table 3 Attitudes of Physical Education Teachers on Gifted Education**

	$\bar{X}$	SD	Level
GENERAL	3.50	.712	Moderately Agree
Need and Support Dimension	3.51	.866	Moderately Agree
Resistance to Objections Dimension	3.60	.967	Moderately Agree
Ability Grouping Dimension	3.40	.946	Moderately Agree

When Table 3 is analyzed, the attitudes of physical education teachers towards gifted education are generally high (Moderately agree) ( $\bar{X}$ =3.50). Considering the sub-dimensions; it is seen that teachers' attitudes are also high in terms of the dimensions of need and support ( $\bar{X}$ =3.51), resistance to objection ( $\bar{X}$ =3.60), and ability grouping ( $\bar{X}$ =3.40). This shows that physical education teachers have a positive attitude towards gifted education.

### Relational Findings on Attitudes of Physical Education Teachers on Gifted Education

**Table 4 T-Test Results of Findings on Attitudes of Physical Education Teachers on Gifted Education According to Gender**

	Gender	N	$\bar{X}$	SD	t	p
GENERAL	Female	25	3.62	.752	.950	.345
	Male	70	3.46	.698		
Need and Support Dimension	Female	25	3.52	.992	.046	.963
	Male	70	3.51	.825		
Resistance to Objections Dimension	Female	25	3.88	.912	1.703	.092
	Male	70	3.50	.972		
Ability Grouping Dimension	Female	25	3.59	.935	1.139	.258
	Male	70	3.33	.947		

When Table 4 is examined, it is seen that the average for female teachers in general ( $\bar{X}$  = 3.62) is higher than the average for male teachers ( $\bar{X}$ =3.46). Looking at the sub-dimensions, it is seen that the averages for female teachers in all sub-dimensions are higher than the averages for male teachers as well.

In consequence of the independent samples t-test conducted to determine whether the attitudes of physical education teachers towards gifted education differ significantly according to their gender, it turns out that the mean differences among groups are not statistically significant both across the scale in general and in sub-dimensions ( $p>.05$ ). Consequently, it can be said that gender is not a variable that affects the attitudes of physical education teachers towards gifted education.

**Table 5 T-Test Results of Findings on Attitudes of Physical Education Teachers on Gifted Education According to Type of School Served**

	Type of School Served	N	$\bar{X}$	SD	t	p
GENERAL	Secondary School	55	3.47	.720	-.454	.651
	High School	40	3.54	.709		
Need and Support Dimension	Secondary School	55	3.54	.871	.350	.727
	High School	40	3.48	.870		
Resistance to Objections Dimension	Secondary School	55	3.46	1.029	-1.588	.116
	High School	40	3.78	.852		
Ability Grouping Dimension	Secondary School	55	3.35	.957	-.556	.580
	High School	40	3.46	.939		

When Table 5 is examined, it is seen that the average for teachers working at high schools in general ( $\bar{X} = 3.54$ ) is higher than the average for teachers working at secondary schools ( $\bar{X}=3.47$ ).

Looking at the sub-dimensions, it is seen that; in need and support dimension, the average for teachers working at secondary schools ( $\bar{X}=3.54$ ) is higher than the average for teachers working at high schools ( $\bar{X}=3.48$ ); while

in resistance to objections and ability grouping dimensions, the averages for teachers working at high schools are higher than the averages for teachers working at secondary schools.

In consequence of the independent samples t-test conducted to determine whether the attitudes of physical education teachers towards gifted education differ significantly according to the types of school they worked at, it turns out that the mean differences among groups are not statistically significant both across the scale in general and in sub-dimensions ( $p>.05$ ). Consequently, it can be said that type of school served is not a variable that affects the attitudes of physical education teachers towards gifted education.

**Table 6 Means and Standard Deviations of the Attitudes of Physical Education Teachers on Gifted Education According to Years of Service**

	Years of Service	N	$\bar{X}$	SD
GENERAL	1-5 Years	26	3.38	.707
	6-10 Years	37	3.70	.606
	11 years and more	32	3.36	.794
Need and Support Dimension	1-5 Years	26	3.42	.870
	6-10 Years	37	3.66	.837
	11 years and more	32	3.42	.901
Resistance to Objections Dimension	1-5 Years	26	3.50	1.038
	6-10 Years	37	3.93	.845
	11 years and more	32	3.29	.945
Ability Grouping Dimension	1-5 Years	26	3.23	1.067
	6-10 Years	37	3.59	.902
	11 years and more	32	3.32	.880

When Table 6 is examined, in general, physical education teachers with 6-10 years of service have the highest average ( $\bar{X}=3.70$ ), where those with 11 and more service years have the lowest ( $\bar{X}=3.36$ ). Looking at the sub-dimensions, teachers with 6-10 years of service have the highest average at all sub-dimensions. It is seen that the averages for teachers with 1-5 years and teachers with 11 years and more are equal ( $\bar{X}=3.42$ ) at need and support dimension; teachers with 11 and more service years have the lowest average ( $\bar{X}=3.29$ ) at resistance to objections dimension; and the teachers with 1-5 years of service have the lowest average ( $\bar{X}=3.23$ ) at ability grouping dimension.

One-way analysis of variance (ANOVA) was used to determine whether the difference between the averages of teachers' attitudes towards gifted education according to the years of service is significant and the results are given in Table 7.

**Table 7 ANOVA Results on the Attitudes of Physical Education Teachers on Gifted Education According to Years of Service**

	Source of Variance	SD	df	MS	F	p	Effect Size
GENERAL	Between groups	2.404	2	1.202	2.439	.093	
	Within groups	45.335	92	.493			
	Total	47.738	94				
Need and Support Dimension	Between groups	1.280	2	.640	.848	.431	
	Within groups	69.376	92	.754			
	Total	70.655	94				
Resistance to Objections Dimension	Between groups	7.503	2	3.751	4.292	.017	.08
	Within groups	80.408	92	.874			
	Total	87.911	94				
Ability Grouping Dimension	Between groups	2.308	2	1.154	1.297	.278	
	Within groups	81.839	92	.890			
	Total	84.147	94				

As a result of the single factor ANOVA performed to determine whether the teachers' attitudes towards gifted education vary significantly according to the years of service, it is seen that general averages between groups are not statistically significantly different ( $F = 2.439, p > .05$ ).

Looking at the sub-dimensions, it is seen that differences of the averages among groups in the dimensions of need and support ( $F = .848, p > .05$ ) and ability grouping ( $F = 1.297, p > .05$ ) are not statistically significant, where averages in resistance to objections dimension among groups differ in a statistically significant ( $F = 4.292, p < .05$ ). The significant difference in the resistance to objections dimension is medium in size ( $\eta^2 = 0.8$ ) and explains the 8% of the total variance.

This result indicates that years of service is not an effective variable on the attitudes of physical education teachers towards gifted education in general, whereas it is effective in the resistance to objections dimension of the scale.

**Table 8 Averages of the Attitudes of Physical Education Teachers on Gifted Education According to Years of Service and Levels of Significance**

	Variable	((J) Years of Service	Difference of Means (I-J)	SE	p	
Resistance to Objections	1.00 1-5 years	2.00 6-10 years	-.43694	.23924	.194	
		3.00 11 years and more	.20833	.24684	.701	
		2.00 6-10 years	1.00 1-5 years	.43694	.23924	.194
	3.00 11 years and more	3.00 11 years and more	.64527(*)	.22569	.020	
		1.00 1-5 years	2.00 6-10 years	-.20833	.24684	.701
			2.00 6-10 years	-.64527(*)	.22569	.020

When the averages among groups in Table 8 are analyzed; the significance difference in resistance to objections dimension between the teachers with 6-10 years of service and the teachers with 11 and more service years occur in favor of the teachers with 6-10 years of service ( $p < .05$ ).

**Table 9 T-Test Results on Attitudes of Physical Education Teachers on Gifted Education According to Department of Graduation**

	Department of Graduation	N	$\bar{X}$	SD	t	p	Effect Size
GENERAL	Department of Physical Education	82	3.56	.722	2.092	.039	0.6
	Other	13	3.12	.522			
Need and Support Dimension	Department of Physical Education	82	3.53	.886	.549	.584	
	Other	13	3.39	.747			
Resistance to Objections Dimension	Department of Physical Education	82	3.71	.915	2.931	.004	0.8
	Other	13	2.89	1.021			
Ability Grouping	Department of Physical Education	82	3.49	.956	2.434	.017	0.8
	Other	13	2.82	.648			

When Table 9 is analyzed, it is seen that the average for the teachers graduated from the department of physical education ( $\bar{X}$ =3.56) is higher than the average for the teachers graduated from other departments ( $\bar{X}$ =3.12). Looking at the sub-dimensions, it is seen that the averages for the teachers graduated from the department of physical education are higher than the averages for teachers graduated from other departments in dimensions of need and support ( $\bar{X}$ =3.53), resistance to objections ( $\bar{X}$ =3.71) and ability grouping ( $\bar{X}$ =3.49).

In consequence of the independent samples t-test conducted to determine whether the attitudes of physical education teachers towards gifted education differ significantly according to the department of graduation, it turns out that the mean differences among groups are statistically significant across the scale in general and in resistance to objections and ability grouping dimensions ( $p > .05$ ). This significant difference observed in general across the scale is medium in size (Cohen's  $d=0.6$ ). The significant differences in resistance to objections and ability grouping dimensions are large in size (Cohen's  $d=0.8$ ).

Consequently, it can be said that department of graduation is a variable that affects the attitudes of physical education teachers towards gifted education.

## CONCLUSIONS AND DISCUSSION

Attitudes of physical education teachers towards gifted education are generally at a high level. Teachers' attitudes are also positive in the sub-dimensions of the scale. Supporting the results of the research, there are previous studies that reached the conclusion that teachers' attitudes towards gifted students are positive in general (Mangope and Kuyini, 2013; Metin et al., 2017; Röhm, 2018). There are also studies that conclude that teachers lack the sufficient knowledge about gifted education (Alkan, 2015); and that teachers develop a positive attitude even if they are aware that they lack sufficient knowledge and skills about gifted education (Pemik and Levent, 2019). In addition, when the literature is analyzed, there are also studies that conclude that pre-service teachers' attitudes towards students with special needs are positive (Bégin and Gagné, 1995; Neumeister et al., 2007; Portesova, Budíková and Koutková, 2011; Troxclair, 2013; Melekoğlu, 2013; Güneş, 2015 ; David, 2016; Duran, 2017; İlik, 2019; Aykut, 2020).

Gender is not a variable that affects the attitudes of physical education teachers towards gifted education. When the literature is reviewed; among the studies on attitudes towards gifted and talented students, there are studies concluding that gender is not effective, which support the results of our study (Kaya, 2019; Güneş, 2015; Sarı and Bozgeyikli, 2003; Chipego, 2004; Lassing, 2009; Tortop and Kunt, 2013; Akyıldız, 2017; Gouveia, Ihle, Gouveia, Rodrigues, Marques, Freitas and Lopes, 2019). On the other hand, some study results indicate that the genders of the teachers are effective in their attitudes towards gifted students. Some of these studies conclude that there is a difference in the attitudes of teachers towards gifted students in favor of male teachers (Erdogan and Aksoy, 2019),

while some argue that the difference is in favor of female teachers (Allodi and Rydelius, 2008; Gencil and Satmaz, 2017; Metin and others , 2017).

The type of school served is not a variable that affects physical education teachers' attitudes towards gifted education. Kaya (2019) concluded that the type of school served was not an effective variable on teachers' attitudes towards gifted students in his study as well.

The year of service is not a variable effective on the attitudes of physical education teachers towards gifted education in general. However, it is effective in the dimension of resistance to objections. The effect size of the significant difference in the dimension of resistance to objections is medium. In the dimension of resistance to objections, the highest average comes from the teachers with 6-10 years, the lowest average comes from the teachers with 11 and more service years. Kaya (2019) concluded in his study that years of service is not an effective variable in teachers' attitude development process towards gifted students. Erdogan and Aksoy (2019) stated in their studies that teachers with longer years of service adopted more positive attitudes towards gifted students as compared to the teachers with shorter years of service.

The department of graduation is an effective variable on the attitudes of physical education teachers towards gifted education in general, and in the dimensions of resistance to objections and ability grouping. The effect size of the significant difference in general across the scale is medium. The effect size of the significant difference in the dimensions of resistance to objections and ability grouping is large. According to these results, the average for the teachers who graduated from the department of physical education is higher than the average for the teachers who graduated from other departments. In the literature, there are no studies addressing the graduation department variable with regard to the gifted education. On the other hand, Sarı and Bozgeyikli (2003) concluded in their study that preservice teachers who had taken special education classes developed a more positive attitude towards talented students as compared to other preservice teachers; Uçar et al. (2019) concluded in their studies that the attitudes of physical education department students towards individuals with special needs are more positive than other students; Troxclair (2013) concluded in his study that the education the teachers received enables teachers to develop a positive attitude towards gifted individuals.

### **Recommendations**

The results of the research reveal that the attitudes of physical education teachers towards gifted education are generally positive and high. The attitudes of physical education teachers towards gifted education do not differ significantly depending on gender, school type and years of service. However, the department of graduation variable affects teachers' attitudes. The average of the teachers who graduated from the department of physical education is higher than the average of teachers graduated from other departments. Based on these results, it can be recommended to the Ministry of National Education to opt for candidates who have graduated from the physical education departments rather than those who have graduated from other departments in the appointment of physical education teachers; recommendations can be made to the relevant departments of universities about strengthening their curriculums with additional classes in the field of special education; and researchers can be advised to conduct further researches on different sample groups, devising different variables and different methods.

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