

PROSPECTIVE TEACHERS' ATTITUDES TOWARDS THE EDUCATION OF GIFTED/TALENTED STUDENTS

Cengiz Tuysuz^{ORCID}, Mehmet Gurbuz^{ORCID}, Ahmet Goncu^{ORCID} and Ilker Ugulu^{ORCID}

This study intends to determine the attitudes of prospective teachers towards the education of gifted/talented students. The study utilises the survey model and a quantitative research design. Mean and standard deviation values were calculated to determine the attitude levels of the prospective teachers toward gifted education. In addition, an Independent Sample t-test and One-way ANOVA were used to determine whether prospective teachers' attitudes differ according to independent variables. Considering the averages of the total scores obtained from the scale ($X_{Female}=111.71$ and $X_{Male}=144$), the data shows that the prospective teachers' attitudes towards the education of gifted students were positive. Results also show that gender is not a variable that affects the attitudes of gifted individuals towards their education. Results of the one-way ANOVA reveal that there is a statistically significant difference between the total score obtained from the scale and the sub-dimensions of the 'Supporting and Needs of Gifted Students', 'Opposition to Special Services for Gifted Students' and 'Grade Skipping' of the scale.

KEYWORDS: Gifted Students, Gifted Education, Prospective Teachers

Cengiz Tuysuz

Associate Professor, Faculty of Education, Usak University, Turkey.

Email: cengiz.tuysuz@usak.edu.tr ORCID: <https://orcid.org/0000-0002-0366-9434>

Mehmet Gurbuz

Research Assistant, Faculty of Education, Usak University, Turkey.

Email: mehmet.gurbuz@usak.edu.tr ORCID: <https://orcid.org/0000-0003-2811-9946>

Ahmet Goncu

Research Assistant, Faculty of Education, Usak University, Turkey.

Email: ahmet.goncu@usak.edu.tr ORCID: <https://orcid.org/0000-0003-1846-8122>

Ilker Ugulu 

Associate Professor, Faculty of Education, Usak University, Turkey.

Email: ilkerugulu@gmail.com ORCID: <https://orcid.org/0000-0002-6514-6575>



This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

INTRODUCTION

Education life represents an important process that affects students' cognitive development and self-perception. Teachers are one of the key participants who can directly affect this process (Ugulu & Erkol, 2013). There are many factors that affect the quality of education provided by teachers, and one of them is attitudes (Tuysuz et al., 2022). As in all teaching fields, teacher attitudes have an important place in the field of gifted students (Cross et al., 2018). Teachers and their educational experiences have a great impact on the transformation of gifted students' potential in any field into talent and extraordinary performance (Gagné, 2018). Looking at the literature, it is seen that teachers' attitudes towards the education of gifted students have been the subject of research for many years and many studies have been conducted on this subject (Adler, 1961; Gagné, 2018; Peachman, 1942).

If the studies are grouped in terms of four main educational strategies (acceleration, enrichment, grouping and mentoring) used in the field of gifted people; it is seen that teachers mostly develop negative attitudes or anxiety towards acceleration practices (Chessman, 2010; Gallagher et al., 2011; Siegle et al., 2013). Likewise, there are negative attitudes towards enrichment practices (Begin & Gagné, 1994; McCoach & Siegle, 2007; Polyzopoulou et al., 2014). Attitudes towards grouping gifted students differ. While some studies show a positive attitude towards the grouping strategy (Gallagher et al., 2011; Saunders-Stewart et al., 2013), some studies show an ambivalent attitude (ALGarni, 2012; Perkovic et al., 2015), while others revealed only negative attitudes (Chessman, 2010; Laine et al., 2019; Troxclair, 2013). There were no studies on teacher attitudes towards the mentoring strategy.

Looking at the literature review, it can be concluded that there is no consensus on the need for or priority of educational services offered to gifted children. However, the common point of all these studies is that teachers show that they develop positive attitudes with the increase in their knowledge about the needs of gifted students and educational intervention methods (Chessman, 2010; McCoach & Siegle, 2007; Polyzopoulou et al., 2014; H. S. Tortop & Kunt, 2013). At this point, the importance of qualified teacher education emerges in order to provide the necessary information, tools and support education to meet the academic, social and emotional needs of gifted students (Rowley, 2012).

REVIEW OF THE LITERATURE

In teacher education programs in Turkey, there is no direct compulsory course related to gifted education in any undergraduate program, except for the Special Education Teaching Undergraduate Program (Ugulu, 2021). The only com-

pulsory course in the Special Education Teaching program, instead of being a stand-alone course, is included in the program with the name of "Learning Disability and Special Talent", including the Learning Disability group. In other teaching programs, the education of gifted students is included under the compulsory course called "Special Education and Inclusion". In terms of elective courses, it is seen that there are ten different courses related to the education of the gifted in the Special Education Teaching Program. When other teaching programs are examined in terms of elective courses, only "Teaching Mathematics to Gifted Students" in the Elementary Education Mathematics Teaching Program, "Special Talented Children and Education" in Guidance and Psychological Counselling Undergraduate Program, and "Creativity in Early Childhood and Creative Child Activities" in Preschool Education Undergraduate Program. It is seen that there are elective courses named (Yok, 2018). However, due to the lack of qualified instructors in the field of gifted education, many of the elective courses cannot find a place in the program (Ugulu, 2020).

When we look at the studies conducted with teachers working in Turkey, it was found by H. S. Tortop and Kunt (2013) that the mean scores of teachers working in primary schools towards the education of gifted students were slightly above the medium level and did not differ according to gender, age, or branch. Again, Kunt and Tortop (2017) determined that the attitudes of science and technology teachers towards the education of gifted students are at a positive level, slightly above the indecisive attitude. Kaya (2019), on the other hand, found in his research that classroom teachers' attitudes towards the education of gifted students were "undecided". Kaya and Tortop (2020) found in their study with guidance teachers that there was little positive attitude towards the education of gifted students. In studies conducted with prospective teachers, Yildirim and Oz (2018) determined that prospective teachers have positive attitudes towards gifted children and their education. Considering the attitude scores among the departments, it was stated that the students of the Special Education Department had the most positive attitudes. In another study conducted with prospective teachers, it was stated that the attitudes of gifted students towards education were moderately positive and positive (Gencil & Satmaz, 2017).

When these results are examined, it is seen that both teachers and prospective teachers still do not have a clear attitude towards gifted students and their education. Differences in research results may be due to research methodologies, the quality of education offered in education faculties, and individuals' past experiences with gifted people. However, whatever the reason may be, it is not wrong to say that gifted education is insufficient in all teaching undergraduate programs. If it is accepted that gifted individuals constitute approximately 2-3% of the population of society, there should be

380000 to 570000 gifted students among the 19 million students at preschool, primary, secondary and high school levels in Turkey (Çitil, 2018). However, as of the 2021-2022 academic year, a total of 67375 students, 12579 of whom are at primary school, 43954 at secondary school and 10842 at high school, are educated in Science and Art Centers, which undertake the task of training gifted/talented students in Turkey. In this context, it can be said that gifted students are one of the groups that benefit the least from support education services among student groups requiring special education (Ugulu, 2019). Another factor that contributes to this disadvantage is that support education services are often overlooked due to the perception that these students already have high-level intelligence and ability and can improve without receiving support education services (Sisk, 2009; Van Tassel-Baska, 1997). However, contrary to this perception, there are many studies that show that gifted students are less likely to be successful without receiving supportive education services and that educators play an effective role in the educational development and academic success of these students (McCoach & Siegle, 2007).

Research Objective

It is important to understand teachers' attitudes and beliefs in order to improve the educational services offered to gifted students and to implement effective education and training methods. This will contribute to the development of positive attitudes towards the education of the gifted. Therefore, this study will be useful in terms of evaluating the effects of the curricula applied in teacher training programs in Turkey on the attitudes of prospective teachers in terms of gifted education. In addition, it is thought that the study will be useful in drawing a general framework of the measures that should be taken in order to ensure that prospective teachers can meet the needs of gifted students in their future classes. As a result, the main purpose of this study is to determine the attitudes of prospective teachers towards the education of gifted/talented students.

RESEARCH METHODOLOGY

Research Design

The study utilises the survey model and a quantitative research design. The survey model is a research approach that aims to define a past or present situation as it exists. In this model, there is no effort to change or influence whatever is the subject of research. The aim of this method is to search for answers to the questions of what is the current state of the event or problem that is desired to be investigated with field scanning (Ugulu et al., 2008).

Sampling

The research universe consists of students studying at the education faculty of a state university in Turkey. In the research sample, 132 (79%) of the prospective teachers were female and 35 (21%) were male. At the departmental level, 81 (48.5%) of the prospective teachers study in Special Education, 51 (30.5%) in Turkish Education, and 35 (21%) in Science Education. As it was thought that it was difficult to reach all the students within the scope of the study, sampling was chosen. The sample of the study consists of 167 prospective teachers studying at the same state university. The sampling was created using the convenience sampling method among non-random sampling methods (Fraenkel & Wallen, 2006). In the convenience sampling method, the researcher chooses a situation that is close and easy to access. This sampling method brings speed and practicality to research (Ugulu, 2015). Some demographic information of the university students in the sample is given in Table 1.

Table 1
Demographic Information of the Sampling Group.

Variable		N	%
Gender	Female	132	79.0
	Male	35	21.0
Department	Special Education	81	48.5
	Turkish Education	51	30.5
	Science Education	35	21.0
Age	19	27	16.2
	20	50	29.9
	21	28	16.8
	22	25	15.0
	23	12	7.2
	24	10	6.0
	25 and above	15	8.9

Data Analysis

To determine the statistical analysis method to be applied to the collected quantitative data, it was first determined whether the data showed a normal distribution. For this purpose, the Kurtosis coefficient was calculated as 0.212

and the Skewness coefficient as -0.175 (Table 2). According to [Huck \(2008\)](#), the fact that these values are between -1 and +1 indicates that the data show a normal distribution. Based on the kurtosis and skewness coefficients, it was accepted that the data showed a normal distribution and parametric tests were used in the analysis ([Tabachnick & Fidell, 2007](#)). The arithmetic means and standard deviation values were calculated to determine the attitude levels of the prospective teachers toward gifted education. Independent samples t-test was conducted to determine whether there was a difference between students' attitude levels for gifted education depending on their gender ([Yorek, Sahin, & Ugulu, 2010](#); [Yorek, Ugulu, et al., 2010](#)). A one-way ANOVA test was used to analyse the variance to determine whether there was a difference between the attitudes depending on the grade level of the students ([Aydin et al., 2015](#); [Koruoglu et al., 2015](#)). If there is a difference in the Analysis of Variance, the analysis was conducted using the Least Significant Difference (LSD) test to control the difference. In addition, the Pearson correlation coefficient was calculated to determine whether there was a relationship between the sub-dimensions of the scale depending on the data collected.

Table 2

The Kurtosis and Skewness Coefficients of the Attitude Scale for Gifted Education.

Dimension	N	Skewness	Kurtosis
Supporting and Needs of Gifted Students (SNGS)	167	-0.405	0.047
Opposition to Special Services for Gifted Students (OSSGS)	167	-0.530	0.272
Social Value of Gifted Students (SVGS)	167	-0.423	-0.157
Exclusion and Isolation of Gifted Students (EIGS)	167	-0.202	.262
Creating Special Ability Classes (CSAC)	167	0.119	-0.503
Grade Skipping (GS)	167	0.088	0.240
Total	167	-0.175	0.212

Data Collection Tool

"Attitude Scale for Gifted Education", which was first developed by Nadeau (1984) and Gagné and Nadeau (1985) and adapted into Turkish by H. Tortop (2012), was used in the research. The scale consists of 6 sub-dimensions and 34 items. The scale has 8 items in the "Supporting and Needs of Gifted Students" sub-dimension, 9 items in the "Opposition to Special Services for Gifted Students" sub-dimension, 5 items in the "Social Value of Gifted Students" sub-dimension, 3 items in the "Exclusion and Isolation of Gifted Students" sub-dimension, 4 items in the "Creating Special Ability Classes" sub-dimension, and 5 items in the "Grade Skipping" sub-dimension.

The scale was applied to the students online via Google Classroom during the spring semester of the 2021-2022 academic year. As a result of the analysis of the collected data, the Cronbach alpha internal consistency coefficient was 0.67 for the "Supporting and Needs of Gifted Students" sub-dimension, 0.77 for the "Opposition to Special Services for Gifted Students" sub-dimension, 0.66 for the "Social Value of Gifted Students" sub-dimension, 0.54 for the "Exclusion and Isolation of Gifted Students" sub-dimension, 0.50 for the "Creating Special Ability Classes" sub-dimension, 0.48 for the "Grade Skipping" sub-dimension, and 0.87 for the whole scale.

RESULTS OF THE STUDY

The main purpose of this study is to determine the attitudes of prospective teachers towards the education of gifted/talented students. For this purpose, the findings obtained from the "Attitude Scale for Gifted Education" and its sub-dimensions, which are used as a data collection tool, are presented in tables in this section.

Data in Table 3, regarding the "Supporting and Needs of Gifted Students" sub-dimension shows that the prospective teachers stated "strongly agree" with the "Schools should offer special education services to gifted students." item in 60%, 44.9% in the "Gifted individuals need special attention and support to fully develop their abilities." item and 38.9% in the "We should make the same investments for gifted students as were made for students with learning disabilities." item. It was determined that 46.1% of the participants stated "agree" to the item "Gifted children are often bored at school because their educational needs are not adequately met." and 37.7% of the participants to the item "Gifted students waste their time in regular classrooms because their educational needs are not adequately met.". These evaluations show that prospective teachers do not have a fully supportive attitude towards gifted students' use of special education services. This may be because prospective teachers

primarily consider disabled individuals within the scope of special education services.

It was seen that 40.1% of the participants gave the answer "neutral" and 29.3% "disagree" with the item "Schools are already sufficient to meet the special education needs of gifted students." in this dimension. It was revealed that prospective teachers were undecided about the adequacy of schools in meeting the special education needs of gifted students and that a significant part of them thought they were insufficient. The fact that 35.9% of the participants answered "neutral" to the item "The normal programs of schools quench the intellectual curiosity of gifted students." and 33.5% of the participants stated "neutral" to the item "The special educational needs of gifted students are often neglected in schools." also supports this situation.

Table 3

Supporting and Needs of Gifted Students Sub-Dimension.

Item	SD		D		N		A		SA	
	f	%	f	%	f	%	f	%	f	%
1. Schools should offer special education services to gifted students.	1	0.6	9	5.4	11	6.6	45	26.9	101	60.5
2. Gifted children are often bored at school because their educational needs are not adequately met.	2	1.2	9	5.4	37	22.2	77	46.1	42	25.1
3. Gifted students waste their time in regular classrooms because their educational needs are not adequately met.	10	6.0	32	19.2	43	25.7	63	37.7	19	11.4
4. The special educational needs of gifted students are often neglected in schools.	3	1.8	14	8.4	56	33.5	56	3.5	38	22.8
5. Gifted individuals need special attention and support to fully develop their abilities.	2	1.2	8	4.8	13	7.8	69	41.3	75	44.9

Continued on next page

Table 3 continued											
6. Schools are already sufficient to meet the special education needs of gifted students.	28	16.8	49	29.3	67	40.1	13	7.8	10	6.0	
7. We should make the same investments for gifted students as were made for students with learning disabilities.	5	3.0	16	9.6	21	12.6	6,	35.9	65	38.9	
8. The normal programs of schools quench the intellectual curiosity of gifted students.	5	3.0	16	9.6	60	35.9	64	32.3	32	19.2	

SD: Strongly Disagree; D: Disagree; N: Neutral; A: Agree; SA: Strongly Agree

Regarding the “Opposition to Special Services for Gifted Students” sub-dimension, data in Table 4 shows that the prospective teachers answered “agree” with a rate of 41.9% to the item “The great responsibility for the development of the talents of gifted students’ rests with their families.”. It was determined that the prospective teachers gave the answer “neutral” with a rate of 43.7% to the item “Gifted students in schools are already in a privileged position.”, 31.1% to the item “Taxpayers should not have to pay taxes for the educational needs of the gifted students.”, 33.5% to the item “Normal children are the main resource of our society, so they should be at the centre of our attention.” and 29.9% to the item “If gifted children are given special support and attention, they may become arrogant or selfish.”. The answers support that, as in the first sub-dimension, prospective teachers do not have a high level of positive attitude towards educational support for gifted students.

Table 4
Opposition to Special Services for Gifted Students Sub-Dimension.

Item	SD		D		N		A		SA	
	f	%	f	%	f	%	f	%	f	%
1. Students who need special education services the most are students with learning disabilities.	18	10.8	48	28.7	31	18.6	45	26.9	25	15.0

Continued on next page

Table 4 continued

2. Special programs for gifted students are inconvenient as they will create elitism.	28	16.8	48	28.7	45	26.9	26	15.6	20	12.0
3. Special education services for gifted students are a sign of discrimination.	43	25.7	63	37.7	27	16.2	19	11.4	15	9.0
4. We are responsible for supporting students with learning difficulties rather than gifted students.	38	22.8	42	25.1	28	16.8	38	22.8	21	12.6
5. The great responsibility for the development of the talents of gifted students rests with their families.	4	2.4	21	12.6	38	22.8	70	41.9	34	20.4
6. Gifted students in schools are already in a privileged position.	19	11.4	38	22.8	73	43.7	23	13.8	14	8.4
7. Taxpayers should not have to pay taxes for the educational needs of gifted students.	24	14.4	38	22.8	52	31.1	25	15.0	28	16.8
8. Normal children are the main resource of our society, so they should be at the centre of our attention.	21	12.6	35	21.0	56	33.5	38	22.8	17	10.2
9. If gifted children are given special support and attention, they may become arrogant or selfish.	30	18.0	48	28.7	50	29.9	23	13.8	16	9.6

SD: Strongly Disagree; D: Disagree; N: Neutral; A: Agree; SA: Strongly Agree

Data in Table 5, regarding the "Social Value of Gifted Students" sub-dimension shows that the prospective teachers stated that they "strongly agree" with 43.7% of the item "Gifted people are an invaluable treasure for our society." in the dimension of the social value of the gifted, "agree" with the

rate of 32.9% for the item "I would love to be considered a gifted member of society.", "agree" with 38.9% for the item "A society must develop the talents of gifted individuals at the highest level in order to progress." and "agree" with 34.1% for the item "We are creating the dominant class of our future by providing special education services to gifted students." (Table 5). In this dimension, prospective teachers gave an answer of "neutral" with a rate of 32.9% to the item "Tomorrow's leaders will mostly consist of today's gifted individuals.". The fact that the candidates give "strongly agree" and "agree" answers especially to the "Gifted people are an invaluable treasure for our society." item with a total rate of 85.6% can be considered as an indication that they are significantly aware of the social value of gifted individuals (Table 5). When the "Strongly agree" and "Agree" answers are evaluated together, it can be said that prospective teachers are generally aware of the social importance of gifted individuals.

Table 5
Social Value of Gifted Students Sub-Dimension.

Item	SD		D		N		A		SA	
	f	%	f	%	f	%	f	%	f	%
1. Gifted people are an invaluable treasure for our society.	2	1.2	9	5.4	13	7.8	70	41.9	73	43.7
2. I would love to be considered a gifted member of society.	11	6.6	38	22.8	42	25.1	55	32.9	21	12.6
3. A society must develop the talents of gifted individuals at the highest level in order to progress.	1	0.6	12	7.2	26	15.6	65	38.9	63	37.7
4. We are creating the dominant class of our future by providing special education services to gifted students.	7	4.2	24	14.4	37	22.2	57	34.1	42	25.1
5. Tomorrow's leaders will mostly consist of today's gifted individuals.	19	11.4	37	22.2	55	32.9	34	20.8	22	13.2

SD: Strongly Disagree; D: Disagree; N: Neutral; A: Agree; SA: Strongly Agree

When Table 6 is examined, it is seen that 35.3% of the respondents answered "agree" to the item "Some teachers feel that their authority is undermined by gifted students." in this dimension, and "neutral" at the rate of 35.3% to the items "If a child is labelled as gifted, they will have difficulty making friends." and "Gifted children are often ostracized because they are envied.". When the answers given to this sub-dimension are examined, it can be said that the prospective teachers have the opinion that gifted students are generally excluded from the social environment or are isolated.

Table 6**Exclusion and Isolation of Gifted Students Sub-Dimension.**

Item	SD		D		N		A		SA	
	f	%	f	%	f	%	f	%	f	%
1. If a child is labelled as gifted, they will have difficulty making friends.	15	9.0	29	17.4	59	35.3	45	26.9	19	11.4
2. Some teachers feel that their authority is undermined by gifted students.	9	5.4	17	10.2	50	29.9	59	35.3	32	19.2
3. Gifted children are often ostracized because they are envied.	10	6.0	24	14.4	59	35.3	52	31.1	22	13.2

SD: Strongly Disagree; D: Disagree; N: Neutral; A: Agree; SA: Strongly Agree

Regarding the "Creating Special Ability Classes" sub-dimension, the prospective teachers gave the answer "agree" with 29.9% to the item "Gifted students should be encouraged to study in regular classrooms because gifted students act as an intellectual stimulant for other students." and "If we divide students into gifted and others, we increase many more labels. For example, strong-weak, sufficient-inadequate.". It was determined that 32.9% of the prospective teachers expressed their opinion as "neutral" with "The best way to meet the educational needs of gifted students is to put them in special classes." and "Gifted students should be encouraged to study in regular classrooms because gifted students act as an intellectual stimulant for other students." (Table 7). Regarding this dimension, it is seen that prospective teachers' opinions are distributed among the items. This may be due to the fact that prospective teachers do not have sufficient knowledge about the education of gifted students and inclusion practices.

It was determined that prospective teachers gave the answer "agree" with the items "Most gifted students who skip grades have difficulty socializing with their older group." and "A gifted student wasting time in a grade does

Table 7
Creating Special Ability Classes Sub-Dimension.

Item	SD		D		N		A		SA	
	f	%	f	%	f	%	f	%	f	%
1. The best way to meet the educational needs of gifted students is to put them in special classes.	10	6.0	33	19.8	55	32.9	38	22.8	31	18.6
2. Creating special classes for gifted students makes other students feel worthless.	27	16.2	37	22.2	40	24.0	43	25.7	20	12.0
3. Gifted students should be encouraged to study in regular classrooms because gifted students act as an intellectual stimulant for other students.	11	6.6	23	13.8	55	32.9	50	29.9	28	16.8
4. If we divide students into gifted and others, we increase many more labels. For example, strong-weak, sufficient-inadequate.	5	3.0	22	13.2	40	24.0	50	29.9	50	29.9

SD: Strongly Disagree; D: Disagree; N: Neutral; A: Agree; SA: Strongly Agree

more harm than adapting to a skipped upper class.” in the last sub-dimension of the scale, “Grade Skipping”, at the rate of 39.5% and 37.1%, respectively. They reported that they were undecided with the item “Parents of gifted children constantly pressure their children to skip grades.” at the rate of 37.7% and with the item “The vast majority of gifted children should be allowed to skip grades.” at the rate of 35.3%. For the item “If gifted students are skipped, they lose important ideas.”, prospective teachers stated that they disagreed with 29.9% and were undecided with a rate of 29.9% (Table 8). The distribution of opinions may be due to the fact that prospective teachers do not have enough knowledge about the education of gifted students and inclusion practices.

When the correlation levels between the dimensions are examined in the light of the data presented in Table 9, it is seen that the “Supporting and Needs of Gifted Students” dimension has a positive and significant correlation at the level of 0.01 with the “Exclusion and Isolation of Gifted Students”, “Social Value of Gifted Students” and “Grade Skipping” dimensions. It was deter-

Table 8

Grade Skipping Sub-Dimension.

Item	SD		D		N		A		SA	
	f	%	f	%	f	%	f	%	f	%
1. Most gifted students who skip grades have difficulty socializing with their older group.	13	7.8	29	17.4	39	23.4	66	39.5	20	12.0
2. A gifted student wasting time in a grade does more harm than adapting to a skipped upper class.	5	3.0	22	13.2	53	31.7	62	37.1	25	15.0
3. Parents of gifted children constantly pressure their children to skip grades.	18	10.8	33	19.8	63	37.7	35	21.0	18	10.8
4. If gifted students are skipped, they lose important ideas.	24	14.4	50	29.9	50	29.9	30	18.0	13	7.8
5. The vast majority of gifted children should be allowed to skip grades.	12	7.2	23	13.8	59	35.3	47	28.1	26	15.6

SD: Strongly Disagree; D: Disagree; N: Neutral; A: Agree; SA: Strongly Agree

mined that the "Opposition to Special Services for Gifted Students" dimension was negatively correlated with the "Exclusion and Isolation of Gifted Students" and "Social Value of Gifted Students" dimensions at the level of 0.01, and positively at the level of 0.01 with the "Creating Special Ability Classes" and "Grade Skipping" dimensions. Also, it is seen that the "Social Value of Gifted Students" dimension has a positive and significant correlation at the level of 0.01 with the "Exclusion and Isolation of Gifted Students" dimension. It was determined that the "Exclusion and Isolation of Gifted Students" dimension was negatively correlated with the "Creating Special Ability Classes" and "Grade Skipping" dimensions at the 0.01 level, and the "Creating Special Ability Classes" dimension was positively correlated with the "Grade Skipping" dimension at the 0.01 level (Table 9).

When Table 10 is examined, it can be seen that the mean scores obtained by the prospective teachers in the "Supporting and Needs of Gifted Students" sub-dimension do not differ significantly according to gender ($t_{167}=1.024$, $p>0.05$). It is seen that the total scores obtained in the "Opposition to Special Services for Gifted Students" sub-dimension do not show a statistically

Table 9
Level of Relationship Between Sub-Dimensions.

Sub-Dimension	SNGS	OSSGS	SVGS	EIGS	CSAC	GS
Supporting and Needs of Gifted Students (SNGS)	.12	.45**	.21**	.10	.30**	.68**
Opposition to Special Services for Gifted Students (OSSGS)		-.22**	-.42**	.39**	.49**	.70**
Social Value of Gifted Students (SVGS)			.22**	-.13	.12	.28**
Exclusion and Isolation of Gifted Students (EIGS)				-.36**	-.24**	-.05
Creating Special Ability Classes (CSAC)					.29**	.49**
Grade Skipping (GS)						.69**

significant difference according to gender ($t_{167}=0.246$, $p>0.05$). It was found that the scores obtained by female and male prospective teachers in the "Social Value of Gifted Students" sub-dimension did not differ significantly according to gender ($t_{167}=0.266$, $p>0.05$).

When the scores obtained from the "Exclusion and Isolation of Gifted Students" sub-dimension were examined, it was determined that there was no significant difference according to gender ($t_{167}= 1.266$, $p>0.05$). For the total scores obtained from the "Creating Special Ability Classes" sub-dimension, it was concluded that the mean score of men ($X=12.60$) was higher than the mean score of women, and this difference was statistically significant ($t_{167}=3.159$, $p<0.05$). It was found that the scores obtained in the "Grade Skipping" sub-dimension did not differ significantly by gender ($t_{167}=0.098$, $p>0.05$) (Table 10).

Table 10

t-Test Results of the Scores obtained from the Attitude Scale for Gifted Education by Gender.

Sub-Dimension	Gender	N	X	SS	df	t	p
Supporting and Needs of Gifted Students (SNGS)	F	132	30.30	4.38	165	1.024	0.310
	M	35	31.11	4.16			
Opposition to Special Services for Gifted Students (OSSGS)	F	132	27.80	6.61	165	0.246	0.807
	M	35	28.09	5.89			
Social Value of Gifted Students (SVGS)	F	132	16.88	2.29	165	0.266	0.791
	M	35	16.97	1.69			
Exclusion and Isolation of Gifted Students (EIGS)	F	132	10.10	2.37	165	1.266	0.211
	M	35	9.54	2.29			
Creating Special Ability Classes (CSAC)	F	132	10.90	2.89	165	3.159	0.003*
	M	35	12.60	2.21			
Grade Skipping (GS)	F	132	15.73	2.84	165	0.098	0.922
	M	35	15.69	2.56			
Total	F	132	111.71	11.79	165	1.192	0.238
	M	35	144.00	9.60			

Results in Table 11 show that the scores obtained from the "Supporting and Needs of Gifted Students" dimension differ significantly according to the departments of the prospective teachers [$F(2, 164)=6.706, p<.05$]. The LSD test was performed to reveal between which departments the significant difference was. When the results of the LSD test in Table 12 are examined, it is seen that there is a differentiation in favour of the students in the special education department between the special education department and the science teaching department.

Table 11

ANOVA Results of the Scores obtained from the Attitude Scale for Gifted Education by Department.

Sub-Dimension		SS	df	MS	F	p
Supporting and Needs of Gifted Students (SNGS)	Between Groups	236.123	2	118.062	6.706	.002
	Within Groups	2887.446	164	17.606		
	Total	3123.569	166			

Continued on next page

Table 11 continued						
Opposition to Special Services for Gifted Students (OSSGS)	Between Groups	782.773	2	391.386	10.469	.000
	Within Groups	6131.059	164	37.385		
	Total	6913.832	166			
Social Value of Gifted Students (SVGS)	Between Groups	10.617	2	5.308	1.124	.328
	Within Groups	774.653	164	4.723		
	Total	785.269	166			
Exclusion and Isolation of Gifted Students (EIGS)	Between Groups	1.814	2	.907	.162	.851
	Within Groups	919.132	164	5.604		
	Total	920.946	166			
Creating Special Ability Classes (CSAC)	Between Groups	11.754	2	5.877	.672	.512
	Within Groups	1434.174	164	8.745		
	Total	1445.928	166			
Grade Skipping (GS)	Between Groups	162.779	2	81.390	11.912	.000
	Within Groups	1120.550	164	6.833		
	Total	1283.329	166			
Total	Between Groups	3464.568	2	1732.284	15.768	.000
	Within Groups	18017.300	164	109.862		
	Total	21481.868	166			

SS: Sum of Square; MS: Mean Square

It was found that the scores obtained from the "Opposition to Special Services for Gifted Students" sub-dimension differed significantly according to the departments [$F(2, 164)=10.469, p<.001$]. It was determined that the significant difference was in favour of the students studying in the Special Education department between Special Education-Turkish Education and Special Education-Science Education. The scores obtained from the "Social Value of Gifted Students" sub-dimension did not differ significantly according to the departments of the students [$F(2, 164)=1.124, p>.05$]. It was also observed that the scores obtained from the "Exclusion and Isolation of Gifted Students"

sub-dimension did not differ significantly according to the departments of the students [$F(2, 164)=0.162, p>.05$]. The scores obtained in the "Creating Special Ability Classes" sub-dimension did not differ significantly according to the departments of the students [$F(2, 164)=0.672, p>.05$]. It was determined that the scores obtained in the "Grade Skipping" sub-dimension differed significantly according to the departments of the students [$F(2, 164)=11.192, p<.001$]. According to the results of the LSD test, which was conducted to reveal which groups the difference was between, it was determined that there was a significant difference in favour of special education teaching between Special Education-Turkish Education and Special Education-Science Education departments (Table 12).

Finally, it was concluded that the scores obtained for the whole scale differed significantly according to the departments of the prospective teachers [$F(2, 164)=15.768, p<.001$] (Table 11). According to the results of the LSD test, it was determined that there was a significant difference between Special Education-Turkish Education and Special Education-Science Education in favour of Special Education, and between Turkish Education and Science Education in favour of Turkish Education (Table 12). Considering that undergraduate programs for the education of gifted students in Turkey are within the scope of Special Education Departments, it is an expected result that the positive attitudes of prospective teachers studying in Special Education Departments towards these students are higher than other prospective teachers.

Table 12

LSD Difference Control Analysis Results.

Dependent Variable	I	J	I-J	SE	Sig.
Supporting and Needs of Gifted Students (SNGS)	Special Education	Science Education	3.07*	.84	.000
Opposition to Special Services for Gifted Students (OSSGS)	Special Education	Turkish Education	4.12*	1.09	.000
		Science Education	4.60*	1.23	.000
Grade Skipping (GS)	Special Education	Turkish Education	1.28*	.46	.006
		Science Education	2.49*	.52	.000
	Turkish Education	Science Education	1.21*	.57	.036

Continued on next page

Table 12 continued					
Total	Special Education	Turkish Education	6.65*	1.87	.000
		Science Education	11.23*	2.12	.000
	Turkish Education	Science Education	4.57*	2.30	.048

I: Students from the Department; J:Students from the Department; I-J: Mean Difference; SE: Standard Error; Sig.: Significance

DISCUSSION

According to the results obtained from the analysis of the research data, the prospective teachers stated that the investments made for the students with learning difficulties should also be made for gifted students, that gifted individuals need special attention and support to develop their abilities, and that this support should be provided by providing special education services in schools. However, they think that gifted students are bored with school because their educational needs are not adequately met in schools. Prospective teachers think that the education given to gifted children is not an action that causes discrimination, but a process for their needs, and that the most significant responsibility for the development of the abilities of these individuals belongs to their families. It was concluded that prospective teachers emphasized that categorizing students as gifted and others would increase labelling, that gifted individuals are a treasure for society, and that the special education services offered to these individuals would contribute to the development of society in the future.

Considering the averages of the total scores obtained from the scale ($X_{Female}=111.71$ and $X_{Male}=144$), it was determined that the prospective teachers' attitudes towards the education of gifted students were at a positive level. When the literature is examined, it is seen that the results obtained in the studies conducted to examine the attitudes of prospective teachers (Gencel & Satmaz, 2017; Yildirim & Oz, 2018) towards the education of gifted individuals are consistent with this finding.

Another result obtained from the study is that gender is not a variable that affects the attitudes of gifted individuals towards their education. When the literature is examined, there are studies that support this result (Chessman, 2010; Kaya, 2019; Laine et al., 2019; Polyzopoulou et al., 2014; H. S. Tortop & Kunt, 2013; Yildirim & Oz, 2018), but there are also studies that conclude that the gender variable affects the attitudes of gifted individuals towards their education (Erdoğan & Aksoy, 2019; Gencel & Satmaz, 2017; Özcan, 2016).

For example, according to the results of the study conducted by [Erdoğan and Aksoy \(2019\)](#) in which they examined the attitudes of secondary school teachers towards gifted students, it was concluded that there was a significant difference in favour of male teachers only in the "Grade Skipping" dimension of ASGE. [Özcan \(2016\)](#), on the other hand, concluded that the attitudes of prospective teachers differ in favour of women within the scope of the sub-dimension of "Opposition to Special Services for Gifted Students".

A one-way analysis of variance was used to determine whether there was a relationship between the departments of prospective teachers and the attitudes of gifted individuals towards their education. According to the results of the analysis, it was determined that there were statistically significant differences between the total score obtained from the scale and the sub-dimensions of the "Supporting and Needs of Gifted Students", "Opposition to Special Services for Gifted Students" and "Grade Skipping" of the scale. In order to determine between which departments these differences emerged, an LSD difference control analysis was performed. Accordingly, it was concluded that the difference in the whole scale and the sub-dimensions was in favour of the students studying in special education teaching. There are studies supporting this result in the literature ([Özcan, 2016](#); [Yildirim & Oz, 2018](#)). In the study conducted by [McCoach and Siegle \(2007\)](#), the results are the opposite of this finding. In the said study, it was determined that the attitudes of special education teachers toward the education of gifted students were more negative than the teachers of other departments. [Özcan and Kayadelen \(2014\)](#) in their study, special education teachers stated that gifted students have difficulties in theory and practice in their education and that being a special education teacher is not enough to teach gifted students.

Many studies on the subject have shown that teachers and prospective teachers do not have a clear positive attitude towards the education of gifted students ([Kaya, 2019](#); [Kunt & Tortop, 2017](#); [H. Tortop, 2012](#); [H. S. Tortop & Kunt, 2013](#)). In addition, it can be said that among the student groups requiring special education, gifted students are one of the groups that benefit the least from support education services ([Çitil, 2018](#); [Ugulu, 2020](#)). These students cannot benefit from support education services sufficiently because they think that they already have a high level of intelligence and ability and that they can develop without receiving support education services ([Sisk, 2009](#); [Van Tassel-Baska, 1997](#)). However, contrary to this perception, there are many studies showing that gifted students are less likely to be successful without receiving supportive education services and that the support of educators plays a role in the development of these students ([McCoach & Siegle, 2007](#); [Turkoguz et al., 2021](#)). The findings of this study support these views by showing that prospective teachers' attitudes towards the education of gifted students are not high and that they are not sufficiently supportive of these

students to benefit from special education services.

The findings obtained show that teacher candidates are not sufficiently supportive of gifted students to benefit from special education services. This may be because teachers primarily associate the concept of "special education" with individuals with disabilities due to their educational practices in Turkey. Considering the importance of gifted students benefiting from special education services in terms of the development of these individuals and the responsibility of teachers, it can be said that it is necessary to work on the development of teachers and teacher candidates in this regard.

REFERENCES

- Adler, M. (1961). A study of attitudes toward the gifted child as a causal factor in his socio-personal adjustment. *Gifted Child Quarterly*, 5(4), 134-141. <https://doi.org/10.1177/001698626100500413>
- ALGarni, A. A. (2012). *Attitudes of future special education teachers toward gifted students and their education*. Unpublished Doctoral Thesis. Queensland University of Technology. Retrieved from https://eprints.qut.edu.au/61859/1/Ayidh_AL_Garni_Thesis.pdf
- Aydin, H., Yorek, N., & Ugulu, I. (2015). An investigation of some variables related to students' attitudes towards performance assignments. *Mustafa Kemal University Journal of Graduate School of Social Sciences*, 12(31), 211-229.
- Begin, J., & Gagné, F. (1994). Predictors of attitudes toward gifted education: A review of the literature and a blueprint for future research. *Journal for the Education of the Gifted*, 17(2), 161-179. <https://doi.org/10.1177/016235329401700206>
- Chessman, A. M. (2010). *Teacher attitudes and effective teaching practices for gifted students at stage 6*. Unpublished Doctoral Thesis. The University of New South Wales. Retrieved from <https://doi.org/10.26190/unsworks/23185>
- Çitil, M. (2018). Evaluation of gifted students' education policy in Turkey. *National Education Journal*, 47(1), 143-172. Retrieved from <https://dergipark.org.tr/en/download/article-file/569492>
- Cross, T. L., Cross, J. R., & Reilly, C. (2018). Attitudes about gifted education among Irish educators. *High Ability Studies*, 29(2), 169-189. <https://doi.org/10.1080/13598139.2018.1518775>
- Erdoğan, C. N., & Aksoy, Ö. N. (2019). Secondary school teachers' attitudes in gifted education Balıkesir example. *Anadolu Academy Social Sciences Journal*, 1(2), 63-80.
- Fraenkel, J. R., & Wallen, N. E. (2006). *How to design and evaluate research in education*. New York: McGraw-Hill.

- Gagné, F. (2018). Attitudes toward gifted education: Retrospective and prospective update. *Psychological Test and Assessment Modeling*, 60(4), 403-428. Retrieved from https://www.psychologie-aktuell.com/fileadmin/Redaktion/Journale/ptam-2018-4/02_PTAM_Q4_Gagne.pdf
- Gagné, F., & Nadeau, L. (1985). Dimensions of attitudes toward giftedness. In A. H. Roldan (Ed.), *Gifted and talented children, youth and adults: Their social perspective and culture* (p. 148-170). NY: Trillium Press.
- Gallagher, S., Smith, S. R., & Merrotsy, P. (2011). Teachers' perceptions of the socio-emotional development of intellectually gifted primary aged students and their attitudes towards ability grouping and acceleration. *Gifted and Talented International*, 26(1-2), 11-24. <https://doi.org/10.1080/15332276.2011.11673585>
- Gencel, I. E., & Satmaz, I. (2017). Teacher candidates' attitudes towards the education of gifted students. *International Journal of Curriculum and Instructional Studies*, 7(14), 49-62.
- Huck, S. W. (2008). *Reading statistics and research (5th edition)*. New York: Addison Wesley Longman.
- Kaya, N. G. (2019). Determination of attitudes and opinions of classroom teachers about the education of gifted students. *Education and Science*, 44(199), 239-256. <https://doi.org/10.15390/EB.2019.7978>
- Kaya, N. G., & Tortop, H. S. (2020). Attitudes and opinions of counsellors about the education of gifted students. *International Journal of Evaluation and Research in Education*, 9(4), 1017-1024. <https://doi.org/10.11591/ijere.v9i4.20564>
- Koruoglu, N., Ugulu, I., & Yorek, N. (2015). Investigation of High School Students' Environmental Attitudes in Terms of Some Demographic Variables. *Psychology*, 6, 1608-1623. <https://doi.org/10.4236/psych.2015.613158>
- Kunt, K., & Tortop, H. S. (2017). Examination of science and technology teachers' attitudes and opinions related to giftedness and gifted education in Turkey. *Journal for the Education of Gifted Young Scientists*, 5(1), 37-54. <https://doi.org/10.17478/JEGYS.2017.53>
- Laine, S., Hotulainen, R., & Tirri, K. (2019). Finnish elementary school teachers' attitudes toward gifted education. *Roeper Review*, 41(2), 76-87. <https://doi.org/10.1080/02783193.2019.1592794>
- McCoach, D. B., & Siegle, D. (2007). What predicts teachers' attitudes toward the gifted? *Gifted Child Quarterly*, 51(3), 246-254. <https://doi.org/10.1177/0016986207302719>
- Nadeau, L. (1984). *Construction of an attitude scale toward giftedness (gifted children)*. Unpublished master's thesis, University du Quebec a Montreal, Montreal.
- Özcan, D. (2016). Predictions and attitudes towards giftedness and gifted

- education. *International Journal of Educational Sciences*, 15(1-2), 126-133. <https://doi.org/10.1080/09751122.2016.11890521>
- Özcan, D., & Kayadelen, K. (2014). Special education teachers and their opinions about the education of gifted students. *Procedia-Social and Behavioral Sciences*, 190, 358-363. <https://doi.org/10.1016/j.sbspro.2015.05.011>
- Peachman, M. C. (1942). Attitudes: their significance in education for the gifted. *Journal of Educational Psychology*, 33(3), 183-198. <https://doi.org/10.1037/h0061545>
- Perkovic, I. K., Jurcec, L., & Boric, E. (2015). Primary school teachers' attitudes toward gifted students. *Croatian Journal of Education*, 17(3), 681-724. Retrieved from <https://hrcak.srce.hr/en/file/216282>
- Polyzopoulou, K., Kokaridas, D., Patsiaouras, A., & Gari, A. (2014). Teachers' perceptions toward the education of gifted children in Greek educational settings. *Journal of Physical Education and Sport*, 14(2), 211-221. <https://doi.org/10.7752/jpes.2014.02033>
- Rowley, J. (2012). Professional development needs of teachers to identify and cater for gifted students. *Australasian Journal of Gifted Education*, 21(2), 75-80. <https://doi.org/10.3316/aeipt.198176>
- Saunders-Stewart, K. S., Walker, C. L., & Shore, B. M. (2013). How do parents and teachers of gifted students perceive group work in classrooms? *Gifted and Talented International*, 28(1-2), 99-109. <https://doi.org/10.1080/15332276.2013.11678406>
- Siegle, D., Wilson, H. E., & Little, C. A. (2013). A sample of gifted and talented educators' attitudes about academic acceleration. *Journal of Advanced Academics*, 24(1), 27-51. <https://doi.org/10.1177/1932202X12472491>
- Sisk, D. (2009). Myth 13: The regular classroom teacher can "go it alone. *Gifted Child Quarterly*, 53(4), 269-271. <https://doi.org/10.1177/0016986209346939>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Experimental designs using anova*. Utah, USA: Thomson/Brooks/Cole.
- Tortop, H. (2012). Adaptation study of the attitude scale towards gifted education. *Erzincan University Journal of Graduate School of Social Sciences*, 5(1), 89-106. Retrieved from <https://dergipark.org.tr/tr/pub/erzisosbil/issue/6035/80837>
- Tortop, H. S., & Kunt, K. (2013). Investigation of primary school teachers' attitudes towards gifted education. *International Online Journal of Educational Sciences*, 5(2), 441-451. Retrieved from <http://www.ajindex.com/dosyalar/makale/acarindex-1423904241.pdf>
- Troxclair, D. A. (2013). Preservice teacher attitudes toward giftedness. *Roeper Review*, 35(1), 58-64. <https://doi.org/10.1080/02783193.2013.740603>

- Turkoguz, S., Baran, M. S., Gurbuz, M., Tuysuz, C., & Ugulu, I. (2021). Quantitative evaluation of prospective teachers' views on inclusive education. *European Journal of Education Studies*, 8(10), 219-236. <https://doi.org/10.46827/ejes.v8i10.3944>
- Tuysuz, C., Yoruk, A. M., Turkoguz, S., & Ugulu, I. (2022). Factors Affecting the Fear Levels of Secondary School Students During the COVID-19 Pandemic. *MIER Journal of Educational Studies Trends & Practices*, 12(1), 1-18. <https://doi.org/10.52634/mier/2021/v11/i2/2173>
- Ugulu, I. (2015). A quantitative investigation on recycling attitudes of gifted/talented students. *Biotechnology & Biotechnological Equipment*, 29, 20-26. <https://doi.org/10.1080/13102818.2015.1047168>
- Ugulu, I. (2019). Efficacy of recycling education integrated with ecology course prepared within the context of enrichment among gifted students. *International Journal of Educational Sciences*, 26(1-3), 49-58. <https://doi.org/10.31901/24566322.2019/26.1-3.1086>
- Ugulu, I. (2020). Gifted students' attitudes towards science. *International Journal of Educational Sciences*, 28(1-3), 7-14. <https://doi.org/10.31901/24566322.2020/28.1-3.1088>
- Ugulu, I. (2021). Quantitative Research on Gifted Students' Scientific Epistemological Beliefs. *MIER Journal of Educational Studies Trends & Practices*, 11(2), 252-268. <https://doi.org/10.52634/mier/2021/v11/i2/1683>
- Ugulu, I., Aydin, H., Yorek, N., & Dogan, Y. (2008). The impact of endemism concept on environmental attitudes of secondary school students. *Natura Montenegrina*, 7(3), 165-173.
- Ugulu, I., & Erkol, S. (2013). Environmental attitudes of biology teacher candidates and the assessments in terms of some variables. *NWSA-Education Sciences*, 8(1), 79-89.
- Van Tassel-Baska, J. (1997). Excellence as a standard for all education. *Roeper Review*, 20(1), 9-12. <https://doi.org/10.1080/02783199709553843>
- Yildirim, H. I., & Oz, A. S. (2018). An investigation of prospective teachers' attitudes towards the education of gifted children. *National Education Journal*, 47(1), 91-108. Retrieved from <https://dergipark.org.tr/en/download/article-file/569182>
- Yok. (2018). *New teacher training undergraduate programs*. Retrieved 2022-05-29, from <https://www.yok.gov.tr/en>
- Yorek, N., Sahin, M., & Ugulu, I. (2010). Students' representations of the cell concept from 6 to 11 grades: Persistence of the "fried-egg model. *International Journal of Physical Sciences*, 5(1), 15-24.
- Yorek, N., Ugulu, I., Sahin, M., & Dogan, Y. (2010). A qualitative investigation of students' understanding about the ecosystem and its components. *Natura Montenegrina*, 9(3), 973-981.