A Scale Designed for Specifying Educational Needs of Teachers of Gifted and Talented Students

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Abstract. The purpose of the study is to develop a valid and reliable scale specifically designed for identfying the eduational needs of the teachers of gifted and talented students. The study employs exploratory sequential design in which both qualitative and quantitative data have been used and the study group is composed of 343 teachers from 18 branches employed at the Science and Art Centers(BİLSEM). At the end of the study which has passed through the stages of qualitative data collecting and during which the pcychometric features of the proposed scale have been analysed, a 5-point Likert scale has been developed having 65 items and one factor, a good level of explained variance (66%), and high level of validity and reliability (Cronbach-Alpha .99).

Keywords. Gifted students, special talented students, teacher training, science and art center, scale development.

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The value attributed to individuals and education within a society is one of the most significant indicators of the level of civilisation. Societies aware of the importance of qualified labor force as the most prominent source of wealth are continuously in search for the best way of optimising this source. One dimension of these efforts is identifying the gifted and talented individuals of the society and nurturing them in the best possible way that will enable them to use their potential.

Gifted and talented individuals are those converting or having the potential of converting their talent into performance by using their intelligence (Clark, 2015, p. 30). It is of much significance for the future of not individuals but societies to know and improve the talent of gifted and talented students (Tannenbaum, 2000, p. 23) since these individuals have the potential of becoming the problem-solver of the future (Brody & Stanley, 2005, p. 53). On this account, they are too valuable to be left only to coincidences and chances (Akarsu, 2001, p. 4).

In order for having special gifts and talents to transform from potential in early ages to performance in later years, these individuals should have easily reach the most appropriate learning opportunities (Brody & Stanley, 2005, p. 53). Within this context, it could be stated that children are not born with special talents but with the potential of becoming a gifted and talented individual and this potential needs to be continuously developed from their early ages (Clark, 2015, p. 30; Cross & Coleman, 2005, p. 62). According to Akarsu (2001, p. 5), in order to convert their potential into performance in their later years, children with special gifts and talents needs to be guided in an appropriate manner and reach education opportunities suitable for their learning methods. Teachers have the most crucial responsibility within this issue.

Sak (2017, p. 364) indicates that along with having deeper knowledge in their field, the teachers of gifted and talented students should be the one having the capacity of becoming a role model and a true guide for these special students. Clark (2015, p. 16) states that gifted and talented students need the help and guidance of their teachers to be able to have the self-knowledge and take themselves for granted through the features with which they resemble to or differentiate from others. However, there are many studies in the literature indicating the inability and inadequacy of the teachers of gifted and talented students (Alkan, 2015; Gökdere & Ayvacı, 2004; Kaya & Ataman, 2017; Kontaş, 2009; Nar & Tortop, 2017).

One of the most important points to be considered while planning the education of gifted and talented students is that it is possible for each gifted and talented student to have different characteristics and accordingly, it is difficult to make a generalisation about them. Usually, the

curricula of schools are developed considering average students (Brody & Stanley, 2005, p. 30; Gürlen, 2018, p. 15); however, these curricula fails to satisfy the educational needs of gifted and talented students (Erişen, Birben, Yalın & Ocak, 2015, p. 587). Hollingworth (1942, p. 133) expresses that average classis causes gifted and talented students to grow lazy since they fall short of providing motivational challenge that these special students need. Therefore, teachers of gifted and talented students should have the ability of designing a curriculum appropriate for the interest, needs and expectations of these students.

Metin, Dağlıoğlu and Saranlı (2018, p. 171) indicates that teachers of gifted and talented students should carry out enjoyable and challenging activities specifically designed for enabling deeper learning in different fields of interest and abilities and encouraging their sense of wonder. In order to successfully reach these purposes, teachers need to be a part of the learning process and should continually try to improve themselves. Studies in the literature point out that teachers feel incapable of designing a curriculum and find in-service trainings unsatisfactory (Kontaş, 2009; Kurnaz & Arslantaş, 2018; Nar & Tortop, 2017).

Celep (2005, pp. 37-38) notes that the answer for the question of "What kind of a teacher?" and the ideal competences for a teacher differ by societies, cultures, ages and circumstances and there is a real need for an efficient teacher education programme throughout the world. Consequently, discussions related to teacher competencies and teacher education systems keep relevant.

By indicating the ideal and standard knowledge, skills, abilities, attitude and values of any teacher must have, the general competencies of teaching profession are the reference point of determining the targets and course contents, self-evaluation and performance evaluation of teachers (MEB, 2017, p. 12). While these factors form a general framework, the ideal competencies for a teacher differ by student needs and the responsibilities of teachers. According to Sak (2017, p. 383), teacher competencies act as a guide for examining the qualifications of the teachers of gifted and talented students, determining the topics teachers need support and organising seminars or workshops aimed at fulfilling these needs.

The purpose of this study is to develop a valid and reliable scale designed for identifying the educational needs of teachers of gifted and talented students.

Method

Research Model

Studies aimed at developing a scale includes such qualitative research methods as identifying the subject that will be measured, generating item pool and determining the method of measurement (Devellis, 2014, pp. 73–85). Then, quantitative research methods are employed for the purpose of collecting data necessary for testing the draft scale. Due to this dimension of the process, it could stated that scale development studies are one of the mixed research methods comprised of both quantitative and qualitative data analysing (Şad, Özer, Yurtçu & Erdemir, 2019, p. 223).

Among the mixed research methods, the study employs exploratory sequential design in which the researcher applies qualitative methods and then uses quantitative methods to test the quantitative data (Creswell, 2016, pp. 226–227).

Study Group

The population of the study is composed of the teachers of gifted and talented students employed in Science and Arts Centers (BİLSEM). BİLSEMs are special kind of institutions aiming to have gifted and talented students at primary and secondary level discover their skills, abilities and potential and use their capacity at a maximum level such fields as painting, music and general intelligence (MEB, 2019, p. 150). According to the data of 2020-2021 academic year of Ministry of National Education, the number of teachers employed at these institutions are 2073.

In order to specify the necessary sample size for the scale developed to specify the educational needs of teachers of gifted and talented students, the hypothetic sample size table of Cohen, Manion and Morrison (2007, p. 104) has been used. According to this table, a study group of 325 teachers with .95 confidence interval and .05 margin of error is an adequate size to represent the population composed of 2073 units.

Quota sampling method has been employed while determining the study group. This kind of sampling is the one that general categories are firstly identified and sample events or individuals are then added into these categories for the purpose of enabling some kind of differences exist in the sample (Neuman, 2016, p. 322). Accordingly, 18 branches (fields of study) have been specified within the BİLSEMs as categories and 10% of the number of teachers working within these institutions have been included in the study. Through this distribution, it is aimed that each field has the same ratio of representation within the sample. The data of the study has been collected from 343 teachers coming

from these 18 fields of study. Table 1 indicates the fields of study of the teachers employed at BİLSEM, the total number of teachers in the field and the distribution of teachers comprising the study group.

Table 1.

Distribution of Teachers As Regards to Fields of Study

Number	Field of Study	Number of Teachers	Study Group
1	Information Technologies	147	22
2	Biology	91	13
3	Geography	51	8
4	Philosophy	48	7
5	Science	143	21
6	Physics	81	11
7	Visual Arts	207	31
8	Primary School Maths Teaching	137	21
9	English	152	23
10	Chemistry/Chemistry Technology	63	10
11	Mathematics	115	17
12	Music	183	25
13	Primary School Teaching	218	73
14	Social Sciences	88	13
15	History	61	14
16	Technology and Design	95	10
17	Turkish Language and Literature	78	8
18	Turkish	115	16
		2073	343

*The field of psychological counseling and guidance (n=150) has been excluded.

Data Collecting Tools

Conceptual framework. The literature has been firstly reviewed for the purpose of identifying the educational needs of the teachers of gifted and talented students. Demirel has indicated three steps while reviewing the lierature. These are literature review, evaluating the reports and examination of current programme (Demirel, 2015, p. 92).

National and international literature has been reviewed with the purpose of identifying the requisite extent of knowledge, skills, abilities, attitudes and values of the teachers of gifted and talented students. The most significant source related to the qualifications that the teachers of gifted and talented students should bear is Knowledge and Skill Standards in Gifted Education for All Teachers published by the National Association for Gifted Children and Council for Exceptional Children. These standards are composed of 68 competencies of which 33 is about knowledge and 35 is about measuring the level of skills and has been grouped in 16 fields. These fields are composed of such factors as basic skills, features and development of students, individual learning differences, learning strategies, learning media, social interaction, language and communication, teaching planning, professional and ethical applications, evaluation, and collaboration (National Association of Gifted Children, 2013).

Though not directly aimed to identify the competencies of the teachers of gifted and talented students, there also extensive studies in Turkey the purpose of which is to determine these mentioned competencies. One the most important of such studies is the "General Competencies of Teaching Profession" published by the Ministry of National Education aimed to train and improve teachers and their capacities. Continuously changing and improved, this guide is updated in parallel with the developments in the world and has lastly been updated by the ministry in 2017. The guide has been composed of three main fields of competencies divided into eleven categories and sixty-five indicators. The knowledge of field, training in the field and legislation belong to professional knowledge while the field of professional skills includes the planning of education and training, creating learning environments, managing teaching and learning process, and assessment and evaluation. The third and last field, attitudes and values, is composed of competencies related to national, moral and universal values, approaching to students, communication and collaboration abilities, personal and professional development (MEB, 2017, pp. 13-16).

Besides the literature review carried out within the study, the education programmes which are the source of teacher training and in-service trainings that are the main dimension of self-improvement for teachers have also been examined through the study. Moreover, the theses related to the field have been analysed as well (Alkan, 2013; Avcı, 2015; Bilgiç, 2017; Eker, 2020; Kayışdağ, 2018; Kontaş, 2009; Levent, 2011; Mertol, 2014; Özcan, 2014; Şahin, 2012). After all these analyses and evaluation, the draft form which will be used to identify the educational needs of the teachers of gifted and talented students has been created.

Content validity. The draft scale form created with the aim of determining the educational needs of participants has been presented examined by three programme development expert, one special education expert and one expert of gifted and talented students for the content validity. The experts have written their views into the columns specified as "Appropriate", "Not appropriate", "Appropriate but needs correcting", and "Recommendation/Explanation" for each item. Firstly having 76 items, the scale has been updated in accordance with the views and comments of the experts.

There is a 1 sample item related to the evaluation and correction of the items in the draft scale according to the opinions of the experts.

Example of an item	I need this too much.	I need this much.	I need this.	I scarcely need this.	I do not need this.
1. I need to be able to know the theories and approaches related to the education of gifted and talented students.	( )	( )	( )	( )	( )

The expert offered to reorganize the item 1 : "I need to be able to know the theories and approaches related to the education of gifted and talented students." in the first draft of the scale as "I need to learn the theories and approaches related to gifted and talented students." to be compatible with the options in Likert. In terms of this offer, all the items in the scale were reorganized to be integrated with the options in a meaningful way. Another expert offered to change the expression of "know" with "learn" to be more suitable since a curriculum was intended. In terms of these offers the item 1 was changed as "I need to learn the theories and approaches related to gifted and talented students."

After the feedbacks of the experts, the "Scale for Identifying Educational Needs of Teachers of Gifted and Talented Children" has been prepared for the pre-testing by being presented to two field teachers for the comprehensibility check and after the necessary amendments, the scale has been given its last form with 65 items for the test-run. The test-run could be explained as the effort for obtaining data from real population on real conditions with the purpose of reaching the most real form of the concept planned to be measured (Erkuş, 2019, p. 56).

Type of scale. The scale created with the aim of identifying the education needs of teachers of gifted and talented students has been prepared in the form of 5-point Likert Scale type with the

answers for the participants as "5 – I need this too much.", "4 – I need this much.", "3 – I need this.", "2 – I scarcely need this.", and "I do not need this." The sample for the answers has been provided below.

Item	I need this too much.	I need this much.	I need this.	I scarcely need this.	I do not need this.
I need to be able identify the learning styles of gifted and talented students.	( )	( )	( )	( )	( )

Operation

The evidences for the validity and reliability of the scale have been collected as given below after being applied to the teachers of gifted and talented students.

(i) Pearson correlation analysis has been carried out to identify the distinctiveness of scale items.

(ii) Exploratory factor analysis (EFA) has been implemented to recognise and summarise the data of the scale, to determine the implicit structure of the scale and accordingly to collect the data to test the construct validity of the scale.

(iii) Cronbach's Alpha internal consistency coefficient has been calculated with the aim of determining the reliability of the scale.

Data Analysis

Item discrimination. The data collected from 343 participants has been used to identify the item discrimination of 65 items of the scale and it has been observed that no data has been lost. After testing the normality and evaluating the skewness and kurtosis of the data, it has been determined that the data has normal curve of distribution. Then, total item correlation has been calculated with the aim of specifying the effectiveness of items in distinguishing the participants. The correlation coefficients of items ranges from .60 and .88 (see Table 2).

Construct validity: exploratory factor analysis (EFA). Exploratory factor analysis (EFA) has been implemented to recognise and summarise the data of the scale, to determine the implicit structure of the scale and accordingly to collect the data to test the construct validity of the scale.

The steps followed and the findings obtained are presented below:

(i) Examining the suitability of data for factor analysis: It has been found out that the sample sufficiency coefficient of Kaiser-Meyer-Olkin (KMO) which is the indicator of sufficiency of sample size is over .60 (Büyüköztürk, 2015, p. 136; Şeker & Gençdoğan, 2020, p. 100) as .98 and the result of Bartlett's sphericity test is significant (p=.000).

(ii) The coefficient in the correlation matrices has been found over .30 (Pallant, 2016, p. 2016; Tabachnik & Fidell, 2020, p. 619) as .4 and .8. These results have shown that the sample size is sufficient and the items are suitable for factor analysis. The studies in the literature often stress that a minimum of 300 participants or 5 participants per item are sufficient numbers for factor analysis (Tabachnik & Fidell 2020, p. 618).

(iii) Identifying the number of factors of the scale: The Kaiser standard which examines the conditions whose core value (Eigenvalue) is more than 1 as factors has been used in order to specify the minimum number of factors that has the ability to represent the relationship between the variables with a minimum factor number.

(iv) As a result of the principal component analysis, 5 significant factors have been found as having more than 1 eigenvalue. These factors explain the 66.99%, 4.32%, 2.67%, 1.85%, and %1.6 of variance, respectively. The first factor has the highest eigenvalue and one factor explain the 66.99% of the total variance here. According to Büyüköztürk (2015, p. 135), to be an acceptable value, the explained variance should be minimum 30% in one factor structures.

(v) The scree plot below which has been created according to the eigenvalues of factors indicates there is an evident fraction after the first factor and the line then has followed a horizontal pattern (Figure 1).
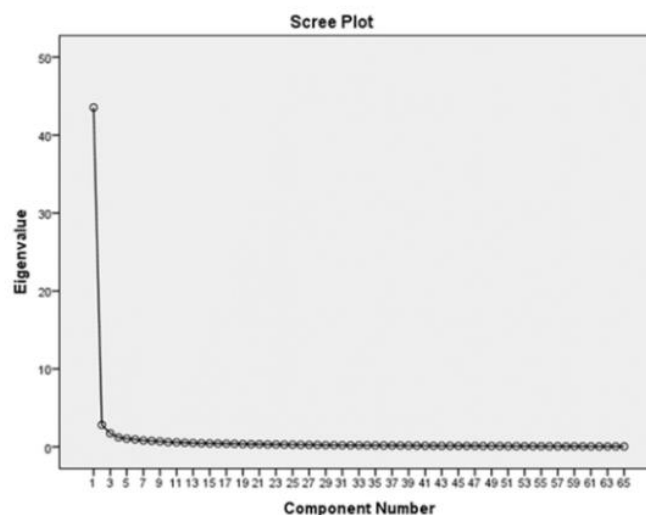

Figure 1. Scree plot for exploratory factor analysis.

(vi) Deciding the rotation technique while calculating factor analysis: Direct Oblimin technique, one of the curve rotation techniques, has been used within the study which is based on the assumption of some extent of correlation (0.30) between the factors. After the analysis, it could be stated that the scale has been composed of one general factor.

The findings obtained from the validity and reliability analysis of the scale has been presented below (see Table 2).

Table 2.
Analysis Results of Draft Scale

(Items)	(Factors)	(Communalities)	(Item-Total Statistic)	(Items)	(Factors)	(Communalities)	(Item-Total Statistic)
Item 48	.889	.790	.883	Item 53	.836	.699	.828
Item 36	.887	.786	.881	Item 23	.835	.698	.829
Item 31	.887	.787	.881	Item 61	.833	.695	.827
Item 41	.885	.784	.879	Item 55	.832	.692	.824
Item 46	.885	.782	.879	Item 35	.831	.691	.824
Item 47	.882	.777	.876	Item 59	.829	.688	.822
Item 34	.878	.770	.871	Item 60	.828	.686	.822
Item 44	.874	.764	.868	Item 52	.827	.683	.820
Item 40	.869	.756	.864	Item 18	.827	.684	.820
Item 37	.865	.747	.858	Item 29	.825	.680	.818
Item 30	.863	.745	.856	Item 19	.823	.677	.817
Item 28	.860	.739	.853	Item 22	.822	.676	.816
Item 33	.859	.738	.853	Item 12	.812	.659	.807
Item 42	.856	.733	.849	Item 11	.811	.658	.807
Item 63	.856	.732	.850	Item 49	.810	.655	.802
Item 62	.855	.731	.850	Item 65	.803	.645	.796
Item 39	.854	.729	.849	Item 27	.802	.643	.794
Item 15	.854	.729	.846	Item 10	.797	.635	.793
Item 32	.854	.730	.848	Item 14	.787	.62	.782
Item 43	.853	.728	.846	Item 13	.783	.613	.777
Item 58	.851	.725	.844	Item 51	.780	.609	.772
Item 24	.851	.724	.845	Item 64	.770	.593	.763
Item 38	.851	.725	.845	Item 50	.761	.578	.752
Item 26	.848	.720	.842	Item 21	.747	.558	.739
Item 17	.846	.715	.840	Item 6	.745	.555	.741
Item 25	.846	.715	.839	Item 9	.737	.544	.733
Item 16	.845	.715	.840	Item 5	.736	.542	.731
Item 20	.845	.715	.840	Item 2	.717	.514	.713
Item 57	.844	.713	.836	Item 4	.667	.445	.662
Item 54	.840	.706	.833	Item 7	.651	.424	.646
Item 56	.839	.704	.832	Item 8	.639	.408	.633
Item 45	.839	.704	.832	Item 1	.614	.377	.608
				Item 3	.605	.367	.600
Eigenvalue	:	43.546					
Rate of Explained Variance	:	%66.994					
Cronbach's Alfa	:	.992					

*Factor loads below .30 has not been presented.

(vii) Specifying the items of factors and excluding problematic items: The load-factor relationship of the scale has been presented in Table 3 according to Comrey and Lee (1992, p. 240) which states that the increase in the load of a variable is the indicator of raw measure of the factor on which the variable is loaded.

Table 3.
Analysis Results of Draft Scale

Factor Load Value	Variance Rate %	Score
.71	50	Excellent
.63	40	Very Good
.55	30	Good
.54	20	Reasonable
.32	10	Weak

According to the data presented in Table 3, Item3 and Item1 is greater than .55 and they could be counted as having a good quality. When the data in the Table 3 is examined, it could be stated that Item 8, Item 7, and item 4 is very good with the value of .63 and the remaining 60 items are in excellent condition with .71 factor load.

Reliability analysis. If the Cronbach's Alpha coefficient receiving a value between 0 and 1 is nearer to 1, then the scale could be counted as reliable (Karagöz, 2019, p. 716; Şeker & Gençdoğan, 2020, p. 47). The Cronbach's Alpha internal consistency coefficient of the study has been found as 0.99 (see Table 2) and this means the scores obtained from the scale are reliable.

Discussion and Results

The purpose of the study is to develop a valid and reliable scale with the aim of specifying the educational needs of teachers of gifted and talented students. At the end of the study which has passed through the stages of qualitative data collecting and during which the pcychometric features of the proposed scale have been analysed, a 5-point Likert scale has been developed having 65 items and one factor, a good level of explained variance (66%), and high level of validity and reliability.

After the exploratory factor analysis, it has been found out that the scale has one factor. The factor loads of items ranges from .889 and .605 while total correlation coefficients of items ranges from .883 and .600.

The items having the greatest contribution in explaining the structure are "Using problem-based learning approach in while teaching to gifted and talented students" (Item 48), "Providing effective learning by using appropriate strategy, method and techniques within the process of teaching to and learning of gifted and talented students" (Item 36), and "Using positive behavioural support methods and techniques in managing the classroom of gifted and talented students" (Item 31), respectively.

The items having the least contribution to explaining the structure are "Learning the law, regulations and legislations related to teaching to gifted and talented students" (Item 3), "Learning theories and approaches related to teaching to gifted and talented students" (Item 1), and "Discussing the issues related to identifying and recognising the gifted and talented students" (Item 8).

The scale has been composed of the statements about not competencies but evaluating the educational needs of teachers of gifted and talented students since it is of much significance to objectively determine the educational needs rather than individual competencies. The higher the score, the higher is the need for education for the teachers of gifted and talented students.

Recommendations

Although the scale has been designed to identify the educational needs of teachers of gifted and talented students employed at BİLSEMs, it could be used to determine the educational needs of teachers employed at formal training schools.

The scale could be used as a guide by practitioners in determining and removing the primary educational need of teachers of gifted and talented students.

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Conflict of Interest

It has been reported by the authors that there is no conflict of interest.

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Ethical Standards

It was approved by Eskişehir Osmangazi University

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Appendix 1. *The Scale Designed for Specifying Educational Needs of Teachers of Gifted and Talented Students*

	I need this too much-5	I need this much-4	I need this-3	I scarcely need this-2	I do not need this-1
Dear colleague; *There are items related to specifying educational needs the teachers of gifted and talented students in this part. Please sign your evaluation related to educational needs between "5 - I need this too much" and "1 - I do not need this".*					
1. FIELD KNOWLEDGE:					
1. I need to learn the theories and approaches related to gifted and talented students.	5	4	3	2	1
2. I need to analyse the related subject and concepts related to gifted and talented students.	5	4	3	2	1
3. I need to learn the laws, regulations and instructions related to gifted and talented students.	5	4	3	2	1
4. I need to learn the recent subjects and matters related to gifted and talented students.	5	4	3	2	1
5. I need to learn the past and recent applications related to the education of gifted and talented students.	5	4	3	2	1
6. I need to be able to explain the reasons related to the for special education needs of gifted and talented students.	5	4	3	2	1
7. I need to learn the diognasis processes of gifted and talented students.	5	4	3	2	1
8. I need to be able to discuss the matters related to the description and diognasis related to gifted and talented students.	5	4	3	2	1
9. I need to learn the ethical principals related to the education of gifted and talented students.	5	4	3	2	1
2. PLANNING OF EDUCATIONAL MANAGEMENT					
10. I need to learn cognitive and emotional characteristics of gifted and talented students.	5	4	3	2	1
11. I need to learn the social, emotional and personality characteristics of gifted and talented students.	5	4	3	2	1
12. I need to learn developmental and individual differences of gifted and talented students.	5	4	3	2	1
13. I need to learn gifted and talented students' the familial, environmental and cultural issues effecting their development.	5	4	3	2	1
14. I need to learn the negative traits and disadvantages of gifted and talented students.	5	4	3	2	1
15. I need to be able to identify the readiness level of gifted and talented students.	5	4	3	2	1
16. I need to be able identify the learning styles of gifted and talented students.	5	4	3	2	1
17. I need to be able identify the needs and interests of gifted and talented students.	5	4	3	2	1
18. I need to be able prepare appropriate teaching plans for gifted and talented students.	5	4	3	2	1
19. I need to be able to prepare flexible teaching plans considering individual differences of gifted and talented students.	5	4	3	2	1
20. I need to be able to prepare interdisciplinary teaching programme for the education of gifted and talented students.	5	4	3	2	1
21. I need to be able to prepare individualised education programme for gifted and talented students.	5	4	3	2	1
22. I need to be able to prepare differentiated teaching plans for the education of gifted and talented students compatible with general teaching programme.	5	4	3	2	1
3. CREATING TEACHING SETTINGS					
23. I need to be able to prepare appropriate teaching materials for developmental characteristics of gifted and talented students.	5	4	3	2	1

24. I need to be able to prepare teaching materials for the outcomes of the curriculum of gifted and talented students.	5	4	3	2	1
25. I need to be able to organize the learning settings for the individual differences of gifted and talented students.	5	4	3	2	1
26. I need to be able to create learning settings for gifted and talented students to think independently and study cooperatively.	5	4	3	2	1
27. I need to be able to create a democratic and positive class setting for the education of gifted and talented students.	5	4	3	2	1
28. I need to be able to create effective and social interactive settings for gifted and talented students.	5	4	3	2	1
29. I need to be able to use the techniques and methods related to the prevention of gifted and talented students' negative behaviours.	5	4	3	2	1
30. I need to be able to design activities to speed up the process of adaptation to the class of gifted and talented students.	5	4	3	2	1
31. I need to be able to use techniques and methods to promote positive behaviours in class management of gifted and talented students.	5	4	3	2	1
32. I need to be able to apply tecniques to provide motivation for gifted and talented students.	5	4	3	2	1
4. MANAGEMENT OF LEARNING AND TEACHING PROCESS					
33. I need to be able to regulate the speed of the teaching activities at a suitable level for the needs of gifted and talented students.	5	4	3	2	1
34. I need to be able to provide necessary facilities for gifted and talented students to inquire own ideas in the fields of their interests and strong sides, and to explore different ideas.	5	4	3	2	1
35. I need to be able to use the information and communication technologies in learning and teaching process actively for gifted and talented students.	5	4	3	2	1
36. I need to be able to carry out the effective learning for gifted and talented students by selecting appropriate strategy, method and techniques in learning and teaching process.	5	4	3	2	1
37. I need to be able to design activities for gifted and talented students to develop their metacognitive skills like creative, reflective and critical thinking.	5	4	3	2	1
38. I need to be able to provide active engagement in the learning process.	5	4	3	2	1
39. I need to be able to connect the subject content to the daily lives of gifted and talented students.	5	4	3	2	1
40. I need to be able to select content coherent to the determined aims for the education of gifted and talented students.	5	4	3	2	1
41. I need to be able to design appropriate learning experiences for gifted and talented students.	5	4	3	2	1
42. I need to be able to provide gifted and talented students to benefit effectively from out of school learning settings.	5	4	3	2	1
43. I need to be able to present content to provide metacognitive thinking skills.	5	4	3	2	1
44. I need to be able to enrich appropriate content for the needs and interests of gifted and talented students.	5	4	3	2	1
45. I need to be able to apply grouping strategy in the education process of gifted and talented students.	5	4	3	2	1
46. I need to be able to teach effective asking question skills to gifted and talented students.	5	4	3	2	1
47. I need to be able to make gifted and talented students carry out collaborational activities.	5	4	3	2	1
48. I need to be avle to use problem based approach in education of gifted and talented students.	5	4	3	2	1

49. I need to be able to use project based learning approach in the education of gifted and talented students.	5	4	3	2	1
50. I need to able to use effective methods and techniques in distance education.	5	4	3	2	1
5. TESTING AND EVALUATION					
51. I need to be able to prepare testing tools suitable for the developmental characteristic of gifted and talented students.	5	4	3	2	1
52. I need to be able to use formal and informal evaluation for the evaluation of gifted and talented students.	5	4	3	2	1
53. I need to be able to use process and aim based methods for testing and evaluation of gifted and talented students.	5	4	3	2	1
54. I need to be able to give feedback to the gifted and talented students and other shaholders according to testing and evaluation results.	5	4	3	2	1
55. I need to be able to reorganize teaching and learning processes according to testing and evaluation results of gifted and talented students.	5	4	3	2	1
56. I need to be able to use the evaluation results to guide education decisions of gifted and talented students.	5	4	3	2	1
57. I need to be able to make gifted and talented students to evaluate their own learning and performance with their future objectives.	5	4	3	2	1
58. I need to be able to use the evaluation results to determine the short and long term aims in education of gifted and talented students.	5	4	3	2	1
59. I need to be able to make gifted and talented students peer assessment.	5	4	3	2	1
60. I need to be able to give performance and project homeworks suitable to the needs and interests of gifted and talented students.	5	4	3	2	1
61. I need to be able to make gifted and talented students to share and exhibit their works.	5	4	3	2	1
6. COMMUNICATION AND COLLABORATION:					
62. I need to learn effective communication methods and types in education of gifted and talented students.	5	4	3	2	1
63. I need to be able to apply strategies to improve the communication skills of gifted and talented students.	5	4	3	2	1
64. I need to be able to educate gifted and talented students to communicate with their families in a positive way.	5	4	3	2	1
65. I need to be able to collaborate with families, colleagues, experts and other shareholders for the teaching activities.	5	4	3	2	1