

Perceptions of Primary School Teacher Candidates Regarding the Characteristics and Education of Gifted Students

Aygen KOÇ KOCA¹

Adıyaman University

Abstract

In this study, the perceptions of primary school teacher candidates regarding the characteristics and education of gifted students were examined. This qualitative study was conducted with a phenomenological research design. Semi-structured interviews were conducted with a total of 62 primary school classroom teachers who were selected using the criterion sampling method. Interview data were analyzed via the descriptive analysis method. The findings of the study showed that primary classroom teacher candidates generally defined giftedness according to the dimensions of high-level mental performance/intelligence and creativity. They considered expert evaluations important in the diagnosis of giftedness, and they also highlighted the importance of identifying the interests of gifted students and applying additional activities and differentiated instructional practices in their education. A particularly noteworthy finding of this study was that primary school teacher candidates considered the lack of competency and knowledge among classroom teachers regarding giftedness as one of the major problems that gifted students may experience in the course of their primary education.

Keywords: Primary school teacher candidates, primary school period, giftedness, characteristics of gifted students, education of gifted students

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¹Res. Ass. Dr., Faculty of Education, Adıyaman University, Adıyaman, Türkiye, ORCID: 0000-0001-9667-7099

Correspondence: akoc@adiyaman.edu.tr

Introduction

Education is widespread in today's world and is increasingly becoming more in-depth. This widespread nature of modern education has given rise to remarkable circumstances, such as recognition of every person having the right to an education. Education being widespread and becoming more in-depth has also highlighted the necessity of meeting the specific educational needs of individuals who require special education by taking into account the characteristics of these individuals. Teaching gifted students, who are among the groups in need of special education, requires a holistic approach in itself due to the individual characteristics of these students. Renzulli (1985) argued that the concept of giftedness involves a combination of high-level talent, motivation, and creativity. These three components enable gifted individuals to stand out among their peers in various ways. This has led to intensified studies being conducted on the characteristics and educational needs of gifted individuals (Koç Koca, 2023).

Worldwide interest in gifted individuals has increased with advancements in technology and scientific activities. The rich imaginative powers and dynamic and promising mental potential of gifted individuals make them essential human resources for countries. The differences of gifted children necessitate that they receive systematic, regulated, and specific education (Syafiril et al., 2020). Although there are specific individual differences between gifted children, studies have shown that common educational norms can be developed and implemented for them (VanTassel-Baska & Brown, 2007). Hence, studies have increased in the field of education with a focus on developing appropriate educational policies or establishing educational institutions and designing appropriate educational programs for these students (Ninkov, 2020).

Gifted children may show differences from each other in terms of learning speed and learning interests. Thus, they constitute a group with heterogeneous cognitive skill characteristics. This causes them to have individual differences from both their peers and each other. It is therefore important that gifted children receive educational opportunities developed specifically for them. The educational opportunities provided to these children should be rich enough to meet their individual learning needs (Sayler, 2021). It has been argued that if such opportunities are not provided, the educational needs of gifted students may not be fully met (Tomlinson & Allan, 2000) and they may not develop the full range of cognitive skills that they are expected to have (Lockhart et al., 2022).

Prior studies have shown that various educational programs and techniques can be used to meet the educational needs of gifted students (Reis et al., 2021). Through these studies, educational adaptation approaches such as grouping, enrichment, and acceleration strategies have been developed. These approaches differentiate educational instruction to enable students to explore the content of the curriculum and make their own choices throughout the learning process. Previous studies have also shown that the primary school period is especially important for both the physical and cognitive

development of children (David, 2011). Beginning the process of formal education during this period causes children to go through many critical changes. The educational needs of gifted children, which are increased during such critical periods, should be met by helping these children discover their talents and ensuring that they receive appropriate education (Syam et al., 2021). It is argued that if these needs are not met, many problems may arise in the children's cognitive, academic, social, and emotional development (Jolly & Kettler, 2008).

Classroom teachers, who both teach and play active roles in diagnosing gifted children who have the capacity to learn very fast, are important components in the education of these children. The fact that the diagnosis of giftedness also generally takes place during the primary school period highlights the importance of primary school classroom teachers in recognizing gifted students and being aware of their educational needs. It also shows that the knowledge, experiences, and attitudes of classroom teachers affect the cognitive and emotional development of gifted students (Çelik Şahin, 2021; Göksu & Gelişli, 2022; Hornstra et al., 2020). In previous studies, it was determined that teachers actively involving gifted students in learning processes, nurturing students' sense of curiosity, and finding solutions to the problems they faced positively affected the development of these students (David, 2011; Syam et al., 2021). Thus, it is expected that teachers will differentiate in terms of personal characteristics, professionalism, didactic skills, and knowledge regarding the skills of gifted students in order to meet their educational needs (David, 2011; Laine et al., 2019). It is thought that among these characteristics, personal characteristics in particular directly affect perceptions of gifted students and their education. Teachers' perceptions of and beliefs regarding giftedness are directly related to the identification and development of these students' potential (Moon & Brighton, 2008). Thus, the appreciation and support of giftedness is influenced by teachers' perceptions, beliefs, and opinions about giftedness (David, 2011; Laine et al., 2019). Studies have also shown that classroom teachers' perceptions and attitudes regarding giftedness affect the degree to which gifted children benefit from early intervention programs and have their additional support needs met (Cukierkorn et al., 2007).

It is often observed that special education is given little importance in teacher training programs, and this creates a framework that makes it difficult for teachers to identify students who need special education or to meet their educational needs (Clinkenbeard & Kollhoff, 2001). This situation may also cause teachers to hold misperceptions that gifted students always have higher academic achievement or are always successful in class (Paek et al., 2020). Recognizing gifted children and identifying their needs requires careful observation, information-gathering, and multidimensional monitoring of the child's development by the teacher. This can only be achieved if the classroom teacher is equipped with knowledge regarding this subject (Laine et al., 2019). This requirement, which directly affects the learning experiences of gifted students, highlights the importance of classroom teachers' competency in this area.

In order for gifted children to reach their cognitive potential in the course of their development, they need the support of classroom teachers (Coleman, 2016). Early diagnosis of these characteristically differentiated children enables them to develop healthy self-identities and to participate in enriched educational experiences appropriate for them (Harrison, 2004). It is known that early diagnosis plays a facilitating role in the actualization and development of the child's performance (Subotnik et al., 2011). In order to diagnose these students early, the knowledge and awareness of classroom teachers regarding the definition, characteristics, and diagnosis of giftedness and educational practices aimed at gifted students should be increased (Brigandi et al., 2019).

If classroom teachers understand the concept of giftedness, their students will be aware of their own potential and it will be ensured that students receive education appropriate for their potential. Thus, classroom teachers play very important roles in the education of gifted students. Prior studies have shown that classroom teachers feel inadequate in terms of professional knowledge and skills regarding the education of gifted children (Barbier et al., 2022). In their study, for example, VanTassel-Baska and Johnsen (2007) reported that one of the most challenging duties of a classroom teacher is determining and meeting the cognitive, emotional, and social needs of gifted students. It was observed through a literature review that studies on meeting the needs of gifted students, which is a process requiring a number of qualifications that differ from general teaching qualifications (Borhan, 2023), and studies on primary classroom teacher candidates' perceptions of gifted children are limited in number. Further studies to be conducted on the views of in-service and primary classroom teacher candidates on the diagnosis of giftedness and their approaches to diagnosis processes and the education of gifted children would contribute to the literature. Thus, the present study aims to answer the following question: What are the perceptions of primary classroom teacher candidates regarding the characteristics and education of gifted students?

Method

Research Method

This study, which examines the perceptions of primary classroom teacher candidates regarding the characteristics and education of gifted students, was conducted with a qualitative research design. Among the qualitative research methods, the phenomenology method, which aims to elucidate the hidden facts in situations that are known but not deeply understood (Yıldırım & Şimşek, 2011), was used in this study. This method was selected to deeply examine the perceptions of primary classroom teacher candidates regarding the characteristics and education of gifted students.

Study Group

The study group of this research consisted of 62 primary classroom teacher candidates, 38 of whom were female while 24 were male, enrolled in the fourth year of study in the Classroom

Education Department of a state university in the 2022-2023 academic year. Among the purposeful sampling methods, the criterion sampling method was used to select these participants. Patton (2014) attributed the validity and significance of qualitative studies to the knowledge level of study group participants rather than the size of the study group. By including the selected participants in the study via the criterion sampling method, the level of knowledge regarding the concept of giftedness among primary school teacher candidates who had already taken courses on giftedness in their undergraduate education was taken into consideration as a criterion. To ensure that the primary classroom teacher candidates had taken courses on giftedness, the study was conducted with preservice classroom teachers in the fourth year of the degree program. This increased the significance of the data obtained from the primary school teacher candidates and ensured that the dataset most appropriate for the purposes of the study was obtained.

Data Collection Tool

A semi-structured interview form developed by the researcher was used as a data collection tool. Semi-structured interviewing is a qualitative data collection technique that allows interviews to be kept under control while the participant answers questions in depth (Willig, 2013). This technique was used in this study to shape the framework of the interviews and to be able to examine the information shared by the participants in depth (Patton, 2014).

The semi-structured interview form consisted of 6 open-ended questions. These questions were prepared to allow the examination of preservice classroom teachers' recognition of gifted students and to clarify their thoughts about the education of these students. In order to ensure the scope and face validity of the prepared questions, the opinion of another expert was obtained. A pilot application was conducted with two preservice classroom teachers before the actual interviews. After the pilot applications, the interview questions were organized and the interview form was finalized. The questions included in the final interview form were as follows:

1. What does giftedness mean to you?
2. What do you think are the characteristics of a gifted child enrolled in primary school?
3. How do you think the diagnosis of giftedness should be made during primary school?
4. What kind of education should be given to gifted students in primary school?
5. What do you think a classroom teacher can do to meet the educational needs of gifted children?
6. What kind of difficulties might gifted children face in primary school education?

The participating primary school teacher candidates answered the questions from the interview form in writing in an environment where no one other than the researcher was present. In order to

ensure the internal validity of the study, direct quotations from the primary school teacher candidates are presented.

Data Analysis

Descriptive analysis was used to analyze, interpret, and discuss the qualitative data obtained from the primary school teacher candidates. With this method, the data obtained via the questions from the interview form were grouped according to certain concepts and themes, and they were analyzed in consideration of the literature on giftedness (Yıldırım & Şimşek, 2011). The data were then organized in tables, explained, and interpreted to allow ease of comprehension by the reader.

The interview forms administered to the primary school teacher candidates were compiled and the participants' answers were analyzed. As a result, it was concluded that there were no invalid forms among the interview forms completed by the participants. The answers given by the participants to each of the six questions included in the form were separately recorded in a computer environment, numbered, and prepared for analysis. Each of the interview questions were internally evaluated and answers given by the participants for each question were coded, categorized, and themed. The themes were determined in accordance with the literature on giftedness. This stage of the analysis was performed separately for each of the six questions and the results obtained were analyzed with the help of frequency tables. In addition, to protect the confidentiality of the participants, they were identified by codes (A1, A2, etc.). Examples of the participants' opinions are presented in the next section for each theme.

The coding performed as part of this analysis was done by two different coders. Discrepancies in the codings were resolved with the consensus of the two encoders. The percentage of inter-coder agreement was calculated using the method proposed by Huberman and Miles (1994), who argued that there should be at least 80% agreement between encoders. It was determined that the encoders of the current study had 94% inter-coder agreement. This indicates that the inter-coder agreement was high.

Results

In this study, perceptions regarding the characteristics and education of gifted students among primary school teacher candidates in the fourth year of their academic program were examined. It was observed that the frequency of the opinions presented by the primary school teacher candidates in response to the questions of the in-depth interviews exceeded the number of participants (N=62). Three main themes emerged from the participants' answers to the questions of the interview form: "Definitions of giftedness" (question 1), "Characteristics of gifted individuals" (questions 2 and 3), and "Education of gifted individuals" (questions 4, 5, and 6). The answers obtained were grouped according to different categories and codes with the help of these themes, and the findings related to the themes are presented with sample opinions from the participants.

Preservice Classroom Teachers' Definitions of Giftedness

It was determined that the participating primary school teacher candidates explained giftedness within four categories that involved definitions of the characteristics of children regarding their cognitive, affective, and social skills and the innateness of their giftedness. The opinions of the participants in this regard are presented in Table 1.

Table 1. Perceptions of preservice classroom teachers regarding giftedness

Categories	f	%	Sample opinions of preservice classroom teachers
Definitions regarding the innateness of giftedness	34	15	Gifted children are distinguished from others in terms of behaviors and thinking since their abilities are innate (A7, A15, A23) / Their superior performance in scientific fields shows that they are born lucky (A2, A33, A45) / Their high level of mental flexibility is directly related to genetics (A14, A27, A51)
Definitions regarding cognitive characteristics			
High-level mental performance/intelligence	45	21	Gifted children show higher mental performance compared to their peers (A3, A59) / They can present ideas on many subjects (A38, A39) / They can do more than a normal child (A17, A26, A44) / They show performances above their age level in different fields (A1, A16, A34, A49)
Creativity	26	12	Gifted children develop flexible and valid solutions to the problems they face (A5, A24, A58) / They produce original ideas (A8, A19) / Their communication and analysis skills are advanced (A9, A52) / They develop original solutions to the problems they face thanks to their knowledge (A11, A18)
Problem-solving skills	15	7	Gifted children produce fast and effective solutions to the problems they face (A25, A30, A46) / Their abilities make it easier for them to cope with everyday problems (A4, A18) / Their mathematical problem-solving skills are advanced (A27, A31)
Definitions regarding affective characteristics			
Different personality	28	13	Gifted children may express different behaviors or ideas in the environments they are in (A22, A61)
Extraordinariness	17	8	Gifted children are quite different from their peers in terms of their behaviors and ways of thinking (A6, A48) / They produce extraordinary ideas (A7, A16, A45)
Curiosity	21	9	Gifted children are very curious and interested in many fields (A5, A19, A56) / Their cognitive skills develop faster because they are more inquisitive than their peers (A23, A36, A41) / They show characteristics of a "researcher identity" (A1, A14, A19)
Definitions regarding social skills			
Leadership	32	15	Gifted children's self-confidence enables them to shape the society they are in (A23, A39, A42) / They are visionaries and have the personalities of leaders (A4, A25, A37, A60)
Total	218	100	

As can be seen in Table 1, primary school teacher candidates' perceptions regarding the definition of giftedness could be grouped within four themes and eight main categories. These categories included "innateness", "high-level mental performance/intelligence", "creativity", "problem-solving skills", "different personality", "extraordinariness", "curiosity", and "leadership". As can be understood from these categories, the participants highlighted many of the general characteristics of gifted students included in the literature. However, they did not touch upon some specific characteristics of gifted students addressed in the literature and used in diagnosis including perfectionism, visuospatial skills, advanced metacognitive skills, motivation, and interdisciplinary

thinking skills. In addition, it was observed that they did not present many opinions regarding the affective and social skills of gifted students. On the other hand, the participants associated giftedness with innateness (34%), high-level mental performance related to intellectual capacity (45%), and leadership skills (32%). In the interviews, the participants stated that giftedness can be defined as advanced abilities and high-level performance shown by children in a certain period of development. Additionally, a small number of participants stated that giftedness is associated with problem-solving (15%).

Characteristics of Gifted Children

The opinions of the participants regarding the characteristics of gifted children were examined with the second and third questions included in the interview form. It was observed that the participants also used the concepts with which they had defined giftedness, such as “creativity”, “high-level mental skills” and “curiosity” while explaining the characteristics of gifted children in primary school. They also described the characteristics of gifted children in terms of “isolation”, “high ability to focus”, “responsibility” and “critical thinking” (Table 2).

Table 2. Opinions of preservice classroom teachers regarding the characteristics of gifted children

Categories	f	%	Sample opinions of preservice classroom teachers
Creativity	30	16	Gifted children have advanced creativity (A8, A11, A24) / Their advanced power of imagination increases their creativity (A18, A52) / They can produce original solutions to the problems they face, which shows that they are creative (A9, A19)
High-level mental performance/intelligence	52	28	Gifted children understand and do some things easier than their peers thanks to their high intelligence (A3, A16, A34) / They show high mental potential because they can learn quickly (A1, A17, A38) / They show faster cognitive development (A1, A16, A26) / Their academic skills are more advanced than those of their peers (A34, A49, A59)
Curiosity	28	15	Gifted children are interested in almost everything due to their curiosity (A1, A5, A19) / They are curious (A23, A36) / They like to research and learn new things (A14, A23, A36)
Isolation	14	7	Gifted children are isolated since they have poor communication skills (A9, A34) / They cannot perform well in human relationships and prefer to be autonomous (A2, A48) / They have poor communication skills and they get isolated (A35, A60) / They don't talk much, they like solitude (A26, A53) / They do not participate in friend groups (A6, A42)
High ability to focus	24	13	Gifted children can show more interest in subjects, they exhibit higher ability to focus (A12, A37) / They are attentive and can focus well (A8, A33, A48) / They can focus on several tasks at the same time (A23, A54, A62)
Responsibility	5	3	Gifted children have higher awareness of their responsibilities (A2, A26, A61)
Critical thinking	34	18	Gifted children have advanced abstract and critical thinking skills (A53, A55) / They can analyze many situations well (A9, A11, A52) / They have advanced assessment skills (A17, A36, A48) / They can critically approach the situations they face (A32, 53)
Total	187	100	

As can be seen in Table 2, the participants used some of the same concepts they used to define giftedness, such as creativity (16%), intelligence (28%), and curiosity (15%), while describing the characteristics of gifted children in primary school. They also, albeit more rarely, mentioned

characteristics such as isolation and responsibility. The participants also considered critical thinking skills (18%) as a characteristic of gifted students.

The third question of the interview form addressed the process expected to be followed in the diagnosis of giftedness. The answers of the participating preservice classroom teachers fell within the three main categories of tests, teacher observations, and expert evaluations to determine giftedness (Table 3).

Table 3. Opinions of preservice classroom teachers regarding the process expected to be followed in the diagnosis of gifted children in primary school

Categories	f	%	Sample opinions of preservice classroom teachers
Tests	20	23	Intelligence tests are used to determine giftedness (A5, A8, A34, A37) / Whether children are gifted should first be evaluated by tests (A13, A17, A46) / There are many tests and documents used to determine giftedness (A3, A62)
Teacher observations	30	35	Teacher observations are very important for the diagnosis of a student in primary school (A24, A31, A56) / In order to diagnose children in this age group, the classroom teacher needs to know the children quite well (A14, A37) / The teacher needs to observe children in a planned manner (A21, A53, A61)
Expert evaluations	36	42	Evaluations of school guidance counselors can be used in the diagnosis of giftedness (A9, A35, A57) / Classroom teachers cannot make diagnoses and children need to be evaluated by specialists for diagnoses (A26, A38) / The school guidance service and counseling and research centers need to evaluate students together (A42, A59) / Experts on giftedness should evaluate and diagnose children (A4, A39, A60)
Total	86	100	

As can be seen in Table 3, most participating preservice classroom teachers believed that the process to be followed in the diagnosis of students is “expert evaluation” (42%). They stated that counseling and research centers and school guidance counselors should take active roles in this process. It is noteworthy that the participants’ opinions in this category included the limited role of teachers in diagnosis. According to some participants, the observations of classroom teachers may be insufficient for diagnosing a student as gifted. In addition, they also emphasized the use of standardized intelligence tests in diagnosing students.

Education of Gifted Children

The opinions of the participants regarding what kind of education should be given to gifted students were examined with the fourth, fifth, and sixth questions of the interview form. In this way, their opinions regarding how a gifted child should be educated, what role teachers play in this education, and the educational difficulties that students may face during this period were learned. In response to the question of what kind of education should be given to gifted children in primary school, the participants’ answers could be grouped within the categories of “differentiation”, “additional activities” and “separate schools” (Table 4).

Table 4. Opinions of preservice classroom teachers regarding what kind of education should be given to gifted students in primary school

Categories	f	%	Sample opinions of preservice classroom teachers
Differentiation	36	35	Gifted children should definitely be provided with differentiated education in the classroom environment (A8, A14, A60) / These students should have a different educational process and differentiated education should be applied for these students (A5, A43) / Special learning environments should be created for these students (A19, A34)
Additional activities	43	41	Activities applied for gifted children should be increased according to their development (A23, A54) / In addition to regular education, these students should be provided with supportive education through specialized activities (A4, A26, A51) / Classroom teachers should develop different activities appropriate for the age and intelligence of the gifted children they teach (A20, A41)
Separate schools	25	24	Gifted children should definitely receive education with students like them in a separate school (A10, A57) / They should not be considered as mainstream students and should receive an enriched education that supports them in separate schools (A6, A38) / They should be directed toward different courses that also support their social lives (A16, A30, A53)
Total	104	100	

When the opinions of the participating preservice classroom teachers regarding the education of gifted students are examined (Table 4), it is seen that they most frequently stated that additional activities should be prepared for these students (41%). According to them, classroom teachers should support the potential of gifted students through additional activities aimed at each part of the curriculum. This shows that they attached importance to enrichment activities in the education of gifted students. The participants also expressed opinions about the use of differentiated education (35%). Their statements that the educational process should be differentiated for gifted children indicated that they believed that creating special learning environments for these students is important. Some participants stated that gifted students should be educated in separate schools (24%), indicating that they thought that gifted students should not be considered as mainstream students and should be educated together with other students with similar intellectual capacities. Similar opinions were also expressed in answering the fifth question, which inquired about how to meet the educational needs of gifted students, with participants stating that they need “special sub-classes” (Table 5).

Table 5. Opinions of preservice classroom teachers regarding how to meet the educational needs of gifted students in primary school

Categories	f	%	Sample opinions of preservice classroom teachers
Special sub-classes	12	13	In order to meet the educational needs of gifted students, special sub-classes should be organized for them (A2, A44) / Sub-classes should be created in schools (A8, A32)
Material diversity	33	36	The materials used in classes should be diversified in order to increase gifted students' interest in courses (A5, A43, A56) / For example, if visual materials are prepared to be used in mathematics courses, students can learn about shapes better by seeing them (A8, A16, A25) / Since classes are crowded, the materials used in class should be diversified (A9)

Student's interests	47	51	The student's interests are the most important determinant, and these should be determined and education should be planned accordingly (A17, A22) / Students have individual differences and they should be identified carefully (A31, A62)
Total	92	100	

The opinions of the participating preservice classroom teachers regarding how to meet the educational needs of gifted students are presented in Table 5. Participants most frequently stated that the interests of students should be taken into account while planning the educational process. This shows that they attached importance to the individual differences of students and taking these differences into account while planning their education. During the interviews, only one participant (A9) highlighted the overcrowding of classrooms. Additionally, participants expressed the need to increase the use and diversity of educational materials. This indicates that the richness of educational activities is important for primary school teacher candidates. The final question of the interview form examined what kinds of difficulties gifted students may face in primary school. The results of the answers are presented in Table 6.

Table 6. Opinions of preservice classroom teachers regarding the difficulties faced by gifted students in primary school

Categories	f	%	Sample opinions of preservice classroom teachers
Social difficulties	23	22	Being together with normal students causes gifted children to experience social difficulties (A7, A13, A52) / Gifted children have difficulty communicating (A5, A19) / Gifted children may sometimes be excluded in classroom environments (A22, A40)
Boredom	14	13	Gifted children may get bored by many subjects since they already have information about them (A27, A41) / Getting bored with routines reduces the quality of education for gifted children (A5, A25)
Teacher competency	44	42	Classroom teachers don't have enough knowledge about gifted children (A17, A29, A43, A60) / There are only a small number of courses in undergraduate education related to gifted children and this makes it difficult to learn about these students (A23, A36) / Teachers are inadequate regarding gifted children (A13, A17, A34) / Most teachers don't receive enough training on gifted children (A24, A61) / I think the low competency of teachers is the most important difficulty for gifted children (A3, A12, A27, A31, A55)
Benefiting from separate educational environments	25	23	If gifted children are not provided with educational environments and programs specifically prepared for them, these children experience difficulties (A26, A51) / If special activities are not planned for them, they may be unable to improve themselves (A30, A62) / The lack of separate schools for gifted children is a significant difficulty for them (A1, A48)
Total	106	100	

As can be seen in Table 6, the participating preservice classroom teachers believed that the biggest difficulty faced by gifted children is the lack of competency among teachers regarding giftedness (42%). Similarly, they stated that teachers' lack of expertise in this area may also cause difficulties in identifying gifted students (A3, A23). They highlighted that this may lead gifted students to miss out on opportunities for appropriate education (A18, A60). Participants also stated that these children may have behavioral and social problems since they have difficulty focusing (22%). Finally, they said that gifted students grow bored easily during education (13%) since they do

not like routines and have more knowledge in many areas compared to their peers. For this reason, some participants emphasized that gifted students should receive appropriate education in separate environments (23%).

Discussion, Conclusion and Recommendations

In this study, the opinions of primary school teacher candidates regarding the recognition of gifted students in primary school and their education were examined. Through the answers given by participants to the questions on an interview form, it was determined that their perceptions of giftedness could be divided into three categories: definitions of giftedness, characteristics of gifted students, and education for gifted students. The participants mostly associated giftedness with high-level mental performance/intelligence and creativity. They also stated that the diagnosis of giftedness should be made through evaluations performed by experts. They believed that additional activities should be utilized in the education of these children. In addition, they stressed the importance of determining students' interests and their abilities and providing them with appropriate educational opportunities in line with those interests and abilities in order to meet their educational needs.

It was observed that the preservice classroom teachers' opinions reflected many characteristics of gifted individuals. The category of high-level mental performance/intelligence was the foremost among these. This shows that the participants most frequently associated giftedness with improved mental performance. However, this may not be true for every gifted child (Olszewski-Kubillus et al., 2021). Gifted children may reveal their high intellectual potential later in life, and it is known that intelligence can be influenced by the environment via many sensory factors (Koç Koca, 2023). For this reason, prior studies have recommended that teachers focus on activities through which they can reveal the creativity and potential of these students (Subotnik et al., 2011). Considering that intelligence leads children to exhibit skills such as quick thinking, improved memory, and active use of problem-solving skills, it can be said that the opinions of these primary school teacher candidates coincided with these characteristics of gifted children. Studies in the literature have reported similar results (McGee & Hughes, 2011). However, the fact that a student's special potential is not fully developed during the primary school period may prevent the student from exhibiting such skills. Therefore, it is important for classroom teachers to observe students well and have knowledge about giftedness.

The participants stated that one of the characteristics of gifted individuals is creativity. Creativity is also considered as one of the determining factors of giftedness in the literature (Jung & Hunter, 2022). Factors that prevent mental leaps, such as limitations and monotony, are minimal during the primary school period (Erdoğdu, 2006). During this period, children's advanced imaginations make it possible for their creative potential to develop at the highest level (Wegerif, 2007). Hence, activities aimed at developing creativity are emphasized in general education programs

(Suherman & Vidákovich, 2022). However, specially designed educational programs will only be effective if teachers are trained to adequately develop the creativity of students (Orhon, 2014). Thus, classroom teachers need to be able to develop verbal and formal creative thinking skills in order to ensure that students develop mental, perceptual, and behavioral creativity.

The participants of the present study believed that gifted children are very curious and have different personality structures. This finding is compatible with those of prior studies in the literature (McGee & Hughes, 2011). However, it was observed that the participants did not mention some important characteristics of gifted students addressed in the literature, such as perfectionism, visuospatial skills, advanced skills, intrinsic motivation, and interdisciplinary thinking (Renzulli, 2022). In addition, the participating primary school teacher candidates did not present many opinions regarding the affective and social skills of gifted students. This indicated that they had only partial knowledge about the characteristics of gifted students. In studies that yielded similar findings, Antoun (2022) argued that this inadequacy can be overcome by providing primary school teacher candidates with training on gifted children and their educational needs. Therefore, the undergraduate education of preservice classroom teachers should be supported with training on the characteristics and social and affective attributes of gifted students in order to close this gap (Laine et al., 2019).

The fact that the participating preservice classroom teachers only had partial knowledge regarding the characteristics of gifted students indicated that the correct screening and identifying of these students may not be achieved. In fact, the opinions of the participants themselves reflected this. They emphasized that it is most appropriate to diagnose gifted students based on expert evaluations (42%). Some participants also believed that teacher observations carry importance in the diagnosis of giftedness (35%). However, the fact that they attached more importance to expert evaluations in diagnoses indicated that they had low self-efficacy in this regard. The consensus in the literature among studies on this subject (Marsili & Pellegrini, 2022) is that preservice and in-service teachers have low success in identifying gifted students. It was also seen in the present study that participants did not mention early diagnosis or the importance of students' outputs in diagnosis. Early diagnosis is important for the development of gifted students (Wellisch, 2021). It is known that gifted children may experience failure and their abilities may not develop if an early diagnosis is not made (Siegle & McCoach, 2005). Therefore, the findings of the present study, including the fact that participants did not consider issues such as early diagnosis or student output and that they believed that diagnoses should be made via expert evaluations, indicated that they lacked information regarding the diagnosis of giftedness. Providing preservice classroom teachers with educational support on giftedness may enable them to better consider the diagnoses of these students.

In this study, the opinions of preservice classroom teachers regarding the education and educational needs of gifted students were also evaluated. It was found that participants believed that it

is very important to utilize additional activities in the education of gifted students (41%). They also expressed opinions that differentiated educational opportunities should be provided to these students (35%) and that they should receive education in separate schools (24%). Although opinions regarding these points were expressed relatively less frequently in the current study, the literature on this subject considers differentiation and education in separate schools to be more effective methods for the education of gifted students compared to the use of additional activities (Scott, 2023). Regarding this, Tomlinson (2001) argued that providing gifted students with additional activities is insufficient to meet their educational needs. Considering that additional activities are the most basic support that can be offered to gifted students, it is thought that focusing on differentiation, enrichment, and grouping in the education of gifted students may be more effective (Walsh, 2015).

The educational opportunities to be provided to gifted students play an important role in meeting their educational needs. In this study, it was found that preservice classroom teachers believed that determining the interests of gifted students is important for meeting their educational needs (51%). This finding of the present study is compatible with the literature. Previous studies have emphasized the importance of determining the interest areas of gifted students for the education of these students (Yazgı et al., 2022).

The participants stated that the most important problems that gifted children face in primary school are caused by teachers' lack of competency regarding gifted students. When the interview answers of the participants were examined in depth, it was seen that they associated this lack of competency with the training provided to primary school teacher candidates. It can be said that the participants considered the training provided to primary school teacher candidates to be very important in recognizing and understanding gifted children and meeting their educational needs. Similar findings were observed in previous studies that found that the training given to teachers directly affects the adequacy of the education provided to gifted students (Smedsrud et al., 2022).

In conclusion, the current study has revealed important findings about the problems expressed by primary school teacher candidates regarding gifted students and their education. The opinions of prospective primary school teachers regarding the characteristics, identification, and education of gifted students indicated that they largely lacked knowledge on the subject. Previous studies in the literature yielded similar results (Coleman, 2016). The lack of self-efficacy among primary school teacher candidates regarding the diagnosis of gifted students particularly indicates that primary school teacher candidates need support in this regard. It is thought that preservice classroom teachers' lack of knowledge regarding the education and characteristics of gifted children in primary school are associated with the content and scope of undergraduate education programs. Therefore, it may be useful to include compulsory courses on the general characteristics and education of gifted students in

teacher training undergraduate programs. In addition, it is recommended to popularize classroom teaching master's degree programs on the education of gifted students.

Policy Implications

Studies on the education and practices of gifted students continue. Studies on teachers' attitudes towards gifted students (Troclair, 2013; Sheffield, 2018) are included in these practices. Particularly, it is known that classroom teachers have a great impact on the education processes of gifted students (Göksu & Gelişli, 2022; Lassing, 2009). When the studies are examined, it is seen that teacher training is the greatest requirement in gifted education (Çelik Şahin, 2021; Korthagen, 2011). This requirement is observed especially in terms of classroom teachers' ability to identify and meet the educational needs of gifted students. For this reason, it is important to give information for teachers about the educational needs, interests, and physical and cognitive characteristics of gifted students. The present study reveals teachers' attitudes towards gifted students. The results showed that teachers do not consider themselves sufficient in terms of meeting the characteristics and educational needs of gifted students. This situation should be taken into account when creating education policies to be put forward in teacher education and education of gifted students. The results of the study suggest that the reorganization of the current education policies towards the educational needs of gifted students will greatly contribute to meeting the educational needs of the students.

Conflict of Interest

The author declares that she has no conflicts of interest.

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The author confirms that she had all responsibilities for the following: conceptualization of the study and design, data collection, data analysis and interpretation of the findings, and preparation of the manuscript.

Ethical Statement

Ethics committee approval has been obtained from the Adıyaman University ethics committee of scientific research with the decision numbered No: 334 on 28.10.2022.

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