



SPECIAL EDUCATION TEACHERS' VIEWS ON TWICE-EXCEPTIONAL PRIMARY SCHOOL STUDENTS' PROBLEMS AND SOLUTIONS

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Abstract

Twice-exceptional students (2E) exhibit a combination of two distinct conditions. Consequently, 2E students face a dual disadvantage compared to their peers. Throughout primary school, classroom teachers and special education teachers are responsible for supporting 2E students. The opinions of special education teachers regarding the problems and solutions faced by 2E students are particularly valuable. Therefore, the current study aims to reveal the views of special education teachers on the issues of twice-exceptional students, including their challenges and proposed solutions. Regarding the research method, qualitative research and content analysis were used. A total of 71 special education teachers participated in the study. As a result of the research, the special education teachers defined twice-exceptional students in 6 different forms. They generated 20 themes and 360 codes related to the problems and solutions for twice-exceptional students. The problem themes with the highest number of codes were identification problems, lack of teacher training, and lack of education programs. The solution themes are early and detailed identification, psychological and behavioral support, and individualized mixed programs. Based on the research findings, the necessity of early identification, teacher education, and an educational and psychological-behavioral program has emerged. Research findings are discussed within the framework of the relevant literature.

Keywords: Twice-exceptional, special education, student, teacher.

INTRODUCTION

Twice-exceptional students (2E) with special needs are a group who face social, psychological, physical, academic, and career challenges due to having one or more disabilities coexisting with high intelligence or ability, differentiating them from their same-age peers, influenced by environmental and genetic factors (Baykoç, 2017). 2E students require twice as much special education due to the conflict between two opposing situations. 2E students' needs are not clearly identified because their numbers cannot be determined due to the problems associated with one of the two situations (disability or special talent), resulting in inadequate planning of the education they require. The number of students with special needs enrolled in the special education system in Turkey was 17,000 in the 2000s, but this has increased to over 55,000 since 2019 (MFSS, 2021). However, it is unknown what percentage of these students or how many are 2E students. Among the reasons for this uncertainty is the fact that 2E students simultaneously possess two opposite characteristics or mask one another, preventing them from being recognized at school (Reis et al., 2014). Masking and polarity make diagnosis more difficult. These challenges become sharper for 2E students. As a result, 2E students face educational and social difficulties arising from their complex nature (Heward, 2006). Although 2E students with mixed equations are first recognized by their families, it is easier for teachers to identify 2E students because academic development begins in primary school (Speirs-Neumeister, 2024). For this reason, primary school teachers and special education teachers have important responsibilities. This is because teachers have the opportunity to observe and monitor students' socio-academic development closely. However, to be able to observe and evaluate, it is not sufficient to possess only knowledge and experience related to giftedness; one must also have sufficient theoretical and practical knowledge regarding students with special needs (Wang & Neihart,



2015). Another important point is which institutions and teachers are fully responsible for the education of 2E students who have reached primary school level, because 2E students are both the address group of general schools and classroom teachers and belong to the student group of special education schools.

The double discrepancy in 2E students affects many areas, ranging from academic to social spheres, and occurs with a synchronous development followed by environmental and hereditary factors (Gallagher, 2006). Despite their challenges, they are 2E students who perform differently and are very high in one or more areas of intelligence, ability, or creativity (Kaufman, 2018). Characteristics of 2E students can include a wide imagination, experience energy fluctuations, show original and practical thinking, and have high memory power, but also have processing speed and comprehension problems, show high or low academic performance, and have characteristics that overshadow their talent or intelligence (Assouline et al., 2010; Maddocks, 2018). Therefore, most of the teachers have difficulty recognizing 2E students. Because 2E students do not show similar characteristics compared to other students, including students with special needs and gifted students, the teachers do not have enough information about 2E students and do not know how to identify them. Insufficient knowledge and experience also lead to stress and feelings of inadequacy in teachers (Assouline et al., 2007). To address this challenge, teachers need to be adequately equipped for the needs of 2E students. Classroom teachers and special education teachers who have the necessary knowledge and experience regarding 2E students and their education will be an important resource for addressing the problems of 2E students and finding solutions to these problems.

Preschool, classroom, and special education teachers are the teacher groups most likely to encounter twice-exceptional students (Gierczyk & Hornby, 2021; Alameddine, 2025). Because 2E students have both a disability and a unique advantage, coordinated and continuous interaction and cooperation between special education, classroom teachers, and gifted education specialists is essential for the social, behavioral, and academic development of 2E students (Josephson et al., 2018; Tortop & Ilgaz, 2023). The reasons why special education teachers are important for the multidimensional development of 2E students are that, in addition to being experts in the socio-educational needs of students requiring special education, special education teachers also possess knowledge about gifted students, as special education teachers undergo comprehensive training during their years of preparation for teaching (Foley-Nicpon & Teriba, 2022). Moreover, special education teachers also encounter 2E students in special education schools. However, there is no study in the literature that addresses the need to obtain the views and experiences of special education teachers. This gap leaves a deficiency in terms of holistic development and support for 2E students (Foley-Nicpon et al., 2013; King, 2022). Therefore, it is crucial to gather the opinions of special education teachers regarding 2E students. This will ensure that all relevant groups are involved in improving the education of 2E students.

In the vast majority of universities, there are no courses on 2E students in teaching departments, and there are no separate courses on 2E students in special education departments; those universities only teach it as a short unit in special education and gifted education courses. The reason for this is that 2E students have the lowest proportion of 2E students with special needs and are twice as difficult to diagnose (Gierczyk & Hornby, 2021; Randall, 2021). While diagnostic tools and tests are diverse, varying by type of disability, such as learning disabilities, ADHD, autism, and emotional and behavioral disorders, and are based on psychometric measures, tests for higher intelligence, giftedness, and creativity are limited and controversial in scope. In other words, there has not yet been a highly valid assessment tool developed to measure two specific conditions at the same time. This situation weakens the diagnostic process for both parents and teachers (Morrison & Rizza, 2007; Neihart, 2008). In addition to these challenges, regarding the appropriate education for diagnosed 2E students. There is still no consensus in the literature on whether gifted and talented education should be provided (differentiation education) or whether education should be provided to develop aspects of the comorbid disability and to continue education with peers (inclusion-integration education) (King,



2022). Besides identification issues, there is also a lack of clarity about who should help 2E students carry out educational and instructional activities.

There is no specific, established approach to educating 2E students, and they typically attend either regular classes or special education schools. In general classrooms, an Individualized Education Program (IEP) is usually based on the type of disability, while an Enriched Education Program (EEP) is implemented as part of differentiation strategies aimed at developing the intelligence, talent, and creativity of 2E students (MNE, 2012; Gürsel, 2013). No education system systematically combines these two programs. Additionally, there are very few experts in this area because neither school teachers nor special education teachers are sufficiently prepared. Another issue is that crowded classrooms prevent 2E students, who are mainstreamed, from receiving adequate education (Cansız & Bayar, 2024). Moreover, special education teachers working in special education institutions serve students with various disabilities, which also limits the quality of education these students receive. There is an ongoing dilemma about which institutions and professionals should meet the educational needs of 2E students (Bianco, 2005). However, both classroom teachers and teachers responsible for gifted and talented education and special education teachers need to be involved in educating 2E students. Additionally, an individualized education program is often not developed in collaboration with the school counselor. Working closely with special education teachers is crucial in providing appropriate instructional activities and helping 2E students reach their full potential in the areas where they need support (Foley-Nicpon & Assouline, 2015; Renzulli & Gelbar, 2020). Despite this recognized need, the role of special education teachers in the education of 2E students has been largely overlooked, with this responsibility falling mostly on classroom teachers. However, the education of 2E students is based on cooperation between educational institutions, with contributions from teachers from various fields, classroom teachers, and special education teachers.

Twice-exceptional students are distinguished from their peers by personality, learning style, and development. They exhibit two extreme sets of traits, which coexist like positive and negative poles. 2E students have special needs in one or more areas, such as reading difficulties, attention deficits, and behavioral disorders, along with exceptional talent, giftedness, or creativity (Klingner, 2022). Generally, 2E students continue their education in mainstream settings as part of inclusion practices. Some 2E students attend special education institutions. Classroom teachers are primarily responsible for educating 2E students in mainstream environments, while special education teachers manage their education in specialized settings (Mayes & Moore, 2016). Special education teachers play a significant role in overcoming the psychosocial behavioral problems of 2E students, as special education teachers possess the necessary knowledge and experience in behavioral intervention strategies and methods (Buică-Belciu & Popovici, 2013; Austermann et al., 2024). In addition, special education teachers face many problems about what to do with students whom they think are twice different (Jolly & Barnard-Brak, 2024). Despite these problems, the opinions of special education teachers working in special education subclasses and special education institutions about 2E students have not been taken. Therefore, the current research relies on the perspectives of special education teachers regarding the challenges faced by 2E students and their potential solutions. It is predicted that the results will contribute to the service quality of the education to be given to 2E students.

Theoretical Background of the Study

This study is grounded in the theories of inclusive education and the shared responsibility model. Inclusive education is an approach designed for twice-exceptional students, that emphasizes the full participation of all students, including those who are twice-exceptional (Rapp & Corral-Granados, 2021). Since this research focuses on the perspectives of special education teachers regarding twice-exceptional students, it adopts the shared responsibility framework. The shared responsibility model emphasizes that stakeholders involved in teaching collaborate and share accountability for all outcomes that may occur (Hawes, 2004; Unda et al., 2021). Although considered a relatively new model, the significance of this approach dates back several years. Will (1986) highlighted the need to develop shared responsibility for twice-exceptional students, who sit at the intersection of two types of education that often do not fully benefit from either inclusive or special education, citing



contributions from various experts. Therefore, special education teachers are clearly among the key educational stakeholders responsible for the education and support of twice-exceptional students. Research also indicates that, in terms of cooperation and responsibility, special education teachers tend to have more positive attitudes toward inclusive education compared to other teachers (Alabdallat et al., 2021; MacNeil et al., 2023). Within the framework of shared responsibility, the perspectives and responsibilities of special education teachers toward twice-exceptional students will play a vital role in their education and the challenges they face. This study underscores the importance of special education teachers' awareness of twice-exceptional students and their significant role within a model of shared responsibility.

Research Statements

1. What are the views of special education teachers on who 2E students are?
2. What are the views of special education teachers on the problems of 2E students?
3. What are the views of special education teachers on the solutions to the problems faced by 2E students?

METHOD

Research Design

A qualitative research method was employed. Qualitative research involves a detailed and direct exploration of individuals' experiences, recognizing that each person may perceive events or situations differently. In this context, a phenomenological perspective was used as one of the techniques in interviews (Yıldırım & Şimşek, 2016). The phenomenological approach investigates a phenomenon from multiple perspectives, based on the lived experiences that shape an individual's understanding, particularly when the nature of that phenomenon is not fully clear (Wilson, 2015). Content analysis served as the data analysis method. Content analysis involves translating abstract thoughts and personal experiences into concrete, analyzable categories (Patton, 1990). Purposive sampling was chosen to align with this method. This sampling technique provides access to individuals with rich experiences and offers greater flexibility to the researcher (Marshall & Rossman, 2014). Questions prepared in consultation with special education experts in accordance with content analysis were presented to participants using interview techniques. The interview technique is a qualitative method that captures both intellectual and emotional knowledge and experiences (Patton, 1990). The participating special education teachers were listed as ÖÖ2E1.....ÖÖ2E71. Demographic questions covered the institutions where they work, their encounters with 2E students, their knowledge about 2E students, sources of information regarding twice-exceptional students, and their interest in receiving training 2E students.

Participants

The research used purposive sampling and involved special education teachers working at the Ministry of National Education Special Education Practice School, special education sub-classes in general education schools, and those in special education and rehabilitation affiliated with the Ministry. During data collection, participants were told about the research and its content. They were assured that the data would be used only for scientific purposes and that participation was voluntary. In total, 71 special education teachers participated in the study.

Table 1. Participants

Variables	n	%
Schools		
Special Education Practice School	46	64.8
Special Education Classroom in a General School	16	22.5
Special Education And Rehabilitation Centers	9	12.7
Total	71	100
Gender		
Female	36	50.7
Male	35	49.3
Total	71	100



Table 1 shows that the teachers working in Special Education Practice Schools is 46 (64.8%), the number of teachers working in special education subclasses in General Schools is 16 (22.5%), and the number of teachers working in Special Education and Rehabilitation Institutions is 9 (12.7%), and the number of female special education teachers is 36 (50.7%) and the number of male special education teachers is 35 (49.3%).

Data Analysis

The interview technique is a key method in qualitative research, used to uncover individuals' knowledge and experiences through oral or written communication (Berg & Lune, 2015). The interview questions were developed based on a literature review and then refined with input from two experts in the special education department. Their feedback was incorporated, and the revised questions were used in the study. A pilot study was conducted with four field teachers using semi-structured questions. Their feedback confirmed that the questions were clear and precise. Subsequently, interviews were conducted with other special education teachers.

In content analysis, the two primary stages involve identifying themes and codes. The interview data were analyzed in their original form without modifications, as this method prioritizes representing participants' thoughts authentically. However, by maintaining the cause-and-effect relationship, comments were made in line with scientific principles, which contributed to the validity of the research. The codes derived from the opinions of special education teachers were grouped into various themes. This approach helps collect shared codes under a theme and represent the whole, supporting internal consistency (Yıldırım & Şimşek, 2016). To enhance reliability, two independent researchers were asked to recode a sample of the data. The percentage of consistency was calculated using the formula $P = Na * 100 / Nt$, where the number of matching codes is Na, and the total number of items is Nt. A reliability coefficient above 70% is considered acceptable (Miles & Huberman, 1994). In this study, the inter-coder reliability was calculated to be 85.2%, indicating a satisfactory level of consistency.

RESULTS

Table 2 presents data on special education teachers' prior experiences with 2E students, their self-reported level of knowledge, their sources of information on the topic, and their willingness to participate in 2E training.

Table 2. Distribution of information on 2E students.

Variables	n	%
The situation of encountering twice-exceptional students		
Yes	41	57.8
No	30	42.2
Information status regarding a twice-exceptional student		
Yes	68	95.8
No	3	4.2
Sources of information about twice-exceptional students		
University	55	77.5
Ministry of National Education-MNE (course, seminar)	4	5.6
Personal research	9	12.7
Media	3	4.2
Request to receive education on twice-exceptional students		
Yes	65	91.5
No	6	8.5
Total	71	100

Analysis of Table 2 reveals that, 57.8% of the special education teachers reported having encountered 2E students, and 42.2% reported they had not. When the knowledge about Twice 2E students is analyzed, 95.8% of the teachers stated that they had the knowledge, and 4.2% stated that they did not have any knowledge. Regarding the sources of this information, 77.5% of the participants reported university, 12.5% personal research, 5.6% MNE, and finally 4.2% media. When asked about their



desire to receive training on 2E students, 91.5% expressed a desire for training, compared to 8.5% who did not.

Analysis of Table 3 shows that special education teachers described 2E students in multiple ways.

Table 3. Special education teachers' views on who 2E students are.

Variables		n	%
Identification	Giftedness+Learning Difficulties	12	16.9
	Giftedness+ADHD	11	15.5
	Giftedness+ Autism	8	11.3
Type of Disability	Giftedness + Emotional and Behavioral Disorder	4	5.6
	Giftedness + Learning Disability + ADHD + Autism	20	28.2
	Giftedness + Others (Disabilities et al.)	16	22.5
	Total	71	100

Note: Special Talent + Others: Special ability and one disability (no definition of which disabilities)

Table 3 is examined, 28.2% of the special education teachers described their 2E students as Giftedness + Learning Disability + ADHD + Autism, 22.5% as giftedness + a disability (disability type was not defined), 16.9% as Giftedness + Learning Disability, 15.5% as Giftedness + ADHD, 11.3% as Giftedness + Autism, and 5.6% as Giftedness + Emotional and Behavioral Disorder. Sample statements are given below:

ÖÖ2E1. “These students are gifted and have learning disabilities; students with giftedness and learning disabilities are an example.”

ÖÖ2E5. “2E students are those who have both giftedness and a disability.”

ÖÖ2E10. “Gifted and Attention Deficit, which we define as 2E students”

ÖÖ2E15. “They are students who twice-different, such as hyperactivity, learning disability, autism, and asperger's syndrome. We can accept individuals diagnosed with at least two of these as individuals who differ from their normal peers.”

ÖÖ2E20. “Students who can experience both giftedness and ADHD, etc., at the same time, they have developed logical and analytical thinking skills.”

ÖÖ2E25. “Such students form a unique group due to their strengths and difficulties. They may have social and emotional problems, so their differences may not be understood, and they may be excluded because these aspects are underdeveloped.”

ÖÖ2E30. “2E students are gifted and 2E students such as attention deficit hyperactivity, learning disabilities, autism, and asperger's syndrome. We can accept them as individuals diagnosed with at least two of these and who differ from their normal peers.”

ÖÖ2E35. “Twice exceptional students a concept used for gifted individuals who have difficulties such as specific learning disability, attention deficit hyperactivity disorder, or autism spectrum disorder. 2E students need to be supported both in areas where they are gifted and in areas where they have deficiencies.”

ÖÖ2E40. “Gifted students are accompanied by an additional disorder or difficulty.”

ÖÖ2E 50. “It refers to students who possess both giftedness and disability.”

ÖÖ2E55. “It refers to individuals who are gifted but also have a different disability. For example, individuals who are gifted in addition to their disabilities, such as hyperactivity, specific learning, and autism.”

ÖÖ2E60. “Gifted and high-functioning students with autism or another condition.”

Table 4 presents the views of special education teachers on the problems faced by twice-exceptional students.

Table 4. Special education teachers' views on the problems of 2E students.

Themes	Codes
Identification	Identification problem (23)
Psychological and Behavioral	Behavioral problem (10), social-communication problem (10), ostracism (9), adaptation problem (7)

**Table 4 (Continued).** Special education teachers' views on the problems of 2E students.

Themes	Codes
Academic	Masking (10), focusing problems (8), failure (8), low self-esteem (5), labeling (5), motivation (2)
Program	Inadequacy of the education program (11), intervention program (3), and Educational support (3)
School	Placement in an appropriate school (6), educational environment (5), school management (2), inadequacy of classrooms (1)
Teacher	Lack of Education (19)
Tools-Equipment-Materials	Insufficient educational tools (5), lack of resources (3)
Assessment	Inadequacy of evaluation methods and tools (4), Lack of follow-up (5)
Familial and social	Poor awareness (12)
Guidance and Research Center-GRC	Insufficient diagnosis (4)
Total	180

From the opinions of special education teachers, 10 themes and 180 codes were derived from the opinions of special education teachers regarding the problems faced by 2E students. The most frequently coded issue was identification problems (23 codes). Within the theme of psychological and behavioral problems, codes included behavioral problems (10) and social and communication problems (10). In the academic problems theme, codes included masking (10), focusing issues (8), and failure (8). The program problems theme highlighted the inadequacy of the education program (11). The school problems theme included issues with appropriate school placement (6), while the teachers' problems theme pointed to a lack of proper teacher training (19). Insufficient educational tools (5) and lack of follow-up (5) were coded under evaluation problems, poor awareness (12) related to family and social problems, and finally, inadequate diagnosis (4) was coded under problems related to GRC. The opinions of special education teachers regarding the problems of 2E students are provided below.

ÖÖ2E2. "2E students can be difficult to recognize because their giftedness can mask their learning difficulties and vice versa. Early diagnosis and accurate assessment processes are important for teachers to unlock these students' full potential. Without a diagnosis, the needs of 2E students may be overlooked or misinterpreted."

ÖÖ2E8. The education of 2E students should be individually assessed in detail, and the teaching plans and process should be determined accordingly. Gifted individuals can perform many skills in the process by using their practical intelligence, but we may not be able to comprehend the co-existing difficulties in these individuals due to this (masking). Therefore, the teaching process should be handled with detailed evaluations and instruction."

ÖÖ2E14. "A special education teacher is alone insufficient to realize the potential of 2E students. This situation leads to different psychological problems such as anxiety, inadequacy, and depression in 2E students."

ÖÖ2E21. "Generally, special education teachers do not have much knowledge on this subject because in universities we are given limited information about these issues, that is, about 2E students."

ÖÖ2E27. "2E students need to be diagnosed and receive appropriate educational support. However, there is no common consensus on how to manage this process. Teacher training programs on this subject are limited. The course programs of universities are insufficient for the education of 2E students. If the number of courses is increased, more competent teachers can be trained in the education of 2E students."

ÖÖ2E33. "When gifted 2E students do not receive education according to their levels and fields from the family and the school, they blunt their talents and exhibit problem behaviors. The reasons for problem behaviors in 2E students are: lack of knowledge of the family about 2E students, lack of materials according to the child's level and special talent area, lack of knowledge of the environment, and the educator."



ÖÖ2E46. Since 2E students show giftedness on the one hand, these aspects need to be strengthened, and the aspects in which they show inadequacies need to be strengthened. The CRC report may be insufficient to identify 2E students. For this, it is necessary to spend more time on measurement and evaluation.”

ÖÖ2E51. “The education process of 2E students can be more difficult than others, for example, each diagnosis has its own educational requirements, you made your education plan according to ADHD, but if the child has a special talent, then you will have difficulty in providing education, and this will also be hard for the child, who may not receive the support they need. Therefore, both diagnoses should be taken into consideration when planning education, which makes your job very difficult.”

ÖÖ2E56. “On one hand, since they show giftedness, these aspects need to be strengthened, and the aspects in which they show inadequacy need to be strengthened. The CRC report may be insufficient to identify 2E students. For this, it is necessary to spend more time on measurement and evaluation. Teachers from different branches can give lessons for this.”

ÖÖ2E62. “There is no clear, dedicated program for these individuals. There are generally programs for gifted individuals or individuals with learning deficits.”

ÖÖ2E68. “I think it is a problem that they generally focus on one area. When they focus on their abilities, their disabilities are in the background. When we focus on the disability, the ability remains in the background. Therefore, a dual program should be implemented, that is, IEP and ZEP together.”

ÖÖ2E69. “First of all, there are problems with the diagnosis and placement of 2E students. Problems arise when students who are referred to GRCs do not receive the correct diagnosis, for example, when they are diagnosed only as gifted and special learning disabilities, or attention deficits are not recognized. When a student is identified as gifted, the family, environment, and teachers may have high expectations for the student, especially academically, and leading to disappointment when the student fails to perform as expected. Another problem is that even if they receive the correct diagnosis, the correct placement is not or cannot be made. Students may be placed as general school students even though they are 2E students. This situation is more common in rural districts, and the reason given for this is the lack of schools and special subclasses suitable for 2E students in the district. ”

Table 5 presents the views of special education teachers regarding the solutions to problems experienced by 2E students.

Table 5. Special education teachers' views on the solution of problems faced by 2E students.

Themes	Codes
Identification supports	Supporting Identification and detailed diagnosis (20)
Psychological and Behavioral supports	Social, emotional, and behavioral support (14)
Scientific Study, Faculty of Education Courses, GRC support	Course for faculty of education departments (9), Consistency of GRC identification (4)
Program supports	Special mixed program (16), IEP (8), EEP (8), intervention program (2), project-based education (1)
School supports	Re-school placement (5), comprehensive guidance and counseling (5), reorganization of educational environments (3), out-of-school social activity (1), Special subclass (6), integration (4), co-teaching classes (1), and flipped classroom (1)
Teacher supports	Teacher education (12), in-service education (6), expert teacher (5), collaboration between teachers (3), mentoring (1), Adaptation (2)
Tools-Equipment-Material support	Special material (4), source diversification (2), scientific evidence-based method (1)
Assessment support	Continuous and regular assessment (9)
Collaboration and awareness	Family (11), school administration (5), society (5), school administration (5)
Legislative support	Legal regulation (1)
Total	180



Table 5 categorizes the proposed solutions from special education teachers into 10 themes derived from 180 codes. In the identification supports theme, supporting identification and detailed diagnosis (20); in the psychological and behavioral support theme, social, emotional, and behavioral support (14); in the scientific study theme, faculty of education courses, GRC support, and courses for Education Faculty departments (9); in the program support theme, a special mixed program (16); in the school support theme, re-school placement (5); in the teacher support theme, teacher education (12); in the tools-equipment-material support theme, special materials (4); in the assessment support theme, continuous and regular assessment (9); in the collaboration and awareness theme, family involvement (11); and as the final theme, legislative support and legal regulation (1). The statements are provided below:

ÖÖ2E3. “2E students learn faster than their peers and may have different interests in addition to a type of disability. Therefore, personalized and enriched education programs should be implemented instead of standard curricula. Instead of traditional teaching methods, more flexible and student-centered approaches should be used for these students: Project-Based Learning: Students can be encouraged to prepare projects to solve real-world problems. Flipped Classroom: Students can learn the lesson at home and apply it in the classroom. Mentoring Programs: Opportunities to work one-to-one with experts in the field can be provided.”

ÖÖ2E7. Their education should continue with a program prepared individually according to the situation in which their giftedness/talent and diagnosis of disability are reflected in their performance. At the same time, it should be ensured that they are educated in general education classes with necessary adaptations in the educational environment and materials rather than being separated from their peers.”

ÖÖ2E21. “Reverse mainstreaming and integration practices can be used. For this, the teachers' options need to come from different branches.”

ÖÖ2E28. “Individualization, diversity, and enrichment curriculum should be applied for the education of 2E students. Providing emotional and social support to 2E students.”

ÖÖ2E37. “In the education of 2E students, the skills that 2E students are superior in and the areas where they show inadequacy should be supported, and the necessary social-behavioral intervention program should be applied.”

ÖÖ2E42. “Since 2E students have some problems due to being misunderstood in society, teachers should adapt instruction to meet the needs of 2E students after the educational diagnosis is received, but I think that teachers are in a difficult position due to factors like some technology and environmental influences, I think that the training teachers have already received is insufficient, and I think that the family and other branch teachers in cooperation with the family and other branch teachers being responsible for this education will provide a higher level of benefit to the individual.”

ÖÖ2E49. “More detailed assessment and evaluation tools should be developed for the identification of 2E students. Schools and special subclasses equipped for 2E students should be opened throughout the country (including districts) so that students can be placed in appropriate schools or special subclasses. In-service training can be provided for special education teachers to ensure that 2E students receive a good education. Special education teaching departments of universities should increase the number of courses on the education of 2E students. Studies can be conducted on sample teaching programs for 2E students. Awareness campaigns can be conducted for families, teachers, and school administrations on the education of 2E students. Special education teachers, school psychological counselors, and family cooperation should be ensured in psychological problems experienced by 2E students in schools.”

ÖÖ2E56. “In the education of 2E students, the skills that 2E students are superior in and the areas where they show inadequacy should be supported, necessary interventions should be made, and environmental adaptations should be made for 2E students. Teachers who will teach 2E students should be in cooperate with the family.”

ÖÖ2E63. Teachers should be involved in education programs. IEPs should be prepared, and guidance and psychological counseling services should be provided.”

ÖÖ2E69. “Social Skills Development training can be given to mitigate the risk of difficulty in peer relationships and exclusion. Low self-confidence, social isolation, and emotional ups and downs may occur. In this case, individual or group guidance should be provided to meet the emotional needs of the child. With Peer, the child can come together with 2E students with similar characteristics, where they can express themselves more easily.



Emotional Awareness Training should be provided to help 2E students accept their strengths and weaknesses. The curriculum should be adapted by enriching the areas where the child is strong and supporting the areas where the child has difficulties. Differentiated teaching methods should be used, taking into account the learning style of the child (for example, audio-visual materials, applied learning.”

ÖÖ2E71. “2E students should be identified with the appropriate education system, and their educational support should be provided with the appropriate education system. Since there is no clear program for these individuals, a study should first be conducted to determine the boundaries of the program. A rich educational environment should be prepared according to the classroom environment and materials used. In addition, the personnel who will make a diagnosis about 2E students in the GRC should be have specific expertise in twice-exceptionality.”

DISCUSSION, CONCLUSION, and SUGGESTIONS

The purpose of this study is to obtain the opinions of special education teachers regarding twice-exceptional students. Although the giftedness aspect of 2E students may develop without special intervention, special education teachers are needed in areas where they have special needs, such as learning difficulties, hyperactivity, or high-functioning autism (Hughes, 2019). Moreover, the issue of which school and which teacher develop twice-exceptional students is ambiguous, and existing research has predominantly focused on classroom teachers and inclusive and integrative education practices (Şentürk et al., 2022). The specific role of special education teachers largely overlooked and under-researched (Gierczyk & Hornby, 2021). Therefore, the opinions of special education teachers regarding 2E students play a significant role in contributing to the holistic development of 2E students.

The results of the current research reflect this context. As a result of the research, it has been observed that special education teachers possess knowledge about who 2E students are. Specifically, they generally understand learning difficulties, attention deficit hyperactivity disorder, and autism that can accompany special talents and giftedness. The teachers also frequently noted that learning difficulties and attention deficit hyperactivity disorder often occur alongside special gifts in giftedness. Based on this, it was assumed that special education teachers know who 2E students are. In his study with special education teacher candidates, Erdimez (2023) found that these candidates were able to identify gifted students. In contrast, most studies involving general education teachers have found that they often struggle to identify 2E students (Kaya, 2015; Weber et al., 2023; Beumann et al., 2025). The reason for this difference between general school teachers and special education teachers is that general school teachers acquire their knowledge about special education from short courses organized by the Ministry of National Education, while special education teachers acquire knowledge about special education and gifted students through both compulsory and elective courses in their departments at university; in other words, they are trained as specialists in the field (Hernandez et al., 2016; Tortop & Agaoglu, 2022). Given these findings, it is clear that special education teachers can play a crucial role in identifying and supporting 2E students. Therefore, active involvement of special education teachers in the education and behavioral intervention strategies for 2E students in both general and special education schools can significantly aid in their development (Zigmond et al., 2024; Reis & Renzulli, 2025).

Special education teachers identified the primary problems faced by 2E students as, first, identification challenges and, second, deficiencies in teacher training. The identification issue of 2E students is the most studied area in the literature (Baum et al., 2014; Weber et al., 2024). This is because the concept of twice-exceptional is unclear; in other words, there is no consensus on the definition of the term twice-exceptional. Other reasons include problems such as the use of uniform assessment tools, issues with the reliability and validity of diagnostic tools, and delays in diagnosis caused by masking (Gilman et al., 2013; Villanueva & Huber, 2019). Inadequate teacher training, along with the fact that teachers lack sufficient knowledge and experience and rely on traditional labels (Bianco & Leech, 2010), contribute to the problem. Therefore, teachers need to enhance their theoretical and practical competencies to ensure early identification and support for 2E students (Firat & Bildiren, 2022). Teachers' engagement in research, their academic preparation, and ongoing



professional development are factors that can increase their awareness of 2E students. Additionally, two other groups that need to enhance their knowledge and awareness are family and society (Dare & Nowicki, 2015). For this reason, increasing awareness among families and the social environment of 2E students is essential.

Special education teachers emphasized the importance of early and detailed diagnoses in addressing the challenges faced by 2E students. The primary obstacle to early identification is the coexistence of giftedness and disability, which complicates diagnosis for students attending school. Additionally, giftedness and disability can mask each other, and low awareness among professionals and society often leads to these conditions being dismissed as myths (Townend & Brown, 2016; Baum & Schader, 2021). Clues for early identification include symptoms observable at a young age, such as early speech development, intelligence scores, and morning urine control (LeBeau et al., 2022). The current research findings indicate that special education teachers' proposed solutions align with the literature. Solutions proposed include detailing the identification of 2E students and diversifying diagnostic methods, providing emotional and behavioral support, and creating appropriate, specialized, and differentiated programs for 2E students. Early detection provides valuable information about social and behavioral issues and facilitates timely intervention programs. Another area of concern in 2E students involves emotional and behavioral adjustment problems (Speirs Neumeister, 2024). Detecting these issues early allows for the implementation of targeted support programs. Support in these areas helps 2E students overcome academic and adjustment challenges (Gómez-Arízaga & Conejeros-Solar, 2021). An additional effective strategy is the implementation of a blended education program. This study highlights that a new blended approach is essential for educating 2E students.

Typically, two types of programs are recommended for 2E students: IEP (Individualized Education Program, for disabilities) and EEP (Enriched Education Program, for giftedness) (Pamungkas et al., 2023). However, these programs are difficult for teachers to implement alone because they involve separate procedures, require specialized teachers, and demand extra time. This situation calls for a new differentiated program, combining elements of both IEP and EEP (Gierczyk & Hornby, 2021). Developing and implementing such a program requires collaboration among special education teachers, classroom teachers, psychological and guidance counselors, school administrators, and families (Assouline & Whiteman, 2011). Recognizing, diagnosing, and educating 2E students necessitates close cooperation and consistency. While collaboration occurs with families, schools, and the community, consistency must be maintained between child and adolescent psychiatry in hospitals and guidance and research center services (Flowers et al., 2018). This coordinated effort has a critical impact on educational development. However, the study by Alabdallat and colleagues (2021) shows that there is very little agreement and cooperation between school teachers and special education teachers. This situation weakens the implementation of joint educational and intervention programs. Therefore, encouraging and increasing internal collaboration between general school teachers and special education teachers will contribute to the education of 2E students and the resolution of their problems in a lasting and sustainable way. It is also very beneficial to seek help from subject teachers, as 2E students need education in multiple areas. Therefore, teachers with 2E students can also receive assistance from classroom and subject teachers regarding differentiated and enriched education as a sub-application.

Conclusion

This study gathered the perspectives of special education teachers regarding the complex needs of Twice-Exceptional (2E) students, highlighting a significant gap between teacher awareness and systemic preparedness. The vast majority of participants (95.8%) reported having knowledge of 2E profiles, yet an equally high percentage (91.5%) expressed a strong need for specialized professional training, currently provided mostly at the university level. Importantly, teachers most often identified and reported the necessity of complex typologies for 2E students, with Giftedness + Learning Disability + ADHD + Autism being the most common combination (28.2%). This widespread presence of complex typologies underscores the challenges faced by current educational systems. Qualitative results identified identification issues as the primary systemic barrier, followed closely by



significant concerns in the psychological and behavioral domains. These concerns are directly linked to reported gaps in existing educational programs and a notable lack of focused teacher training. Consequently, suggested solutions focused on improving detailed and specialized diagnosis, implementing combined educational programs, and providing mandatory, targeted teacher support and training. Overall, this research confirms that effectively supporting the layered, multi-diagnostic needs of 2E students necessitates a move toward comprehensive system reform, beginning with the development of standardized, multi-dimensional identification protocols that recognize the diversity of 2E profiles.

Suggestions for Researchers

Future research should move beyond the perceptions of special education teachers to address the current limitations in understanding Twice-Exceptional (2E) students. Adopting a multi-stakeholder approach that includes general classroom teachers, parents, and 2E students will provide a more comprehensive understanding of the challenges involved. Studies should use mixed-methods designs, using qualitative insights to develop and validate quantitative instruments. This approach will enhance the generalizability of findings and improve the measurement of key issues, such as identification challenges and gaps in teacher training. Furthermore, research should focus on evaluating the outcomes and implementation fidelity of individualized, mixed programs, rather than relying solely on stakeholder opinions.

Suggestions for Practitioners

In addition to fostering collaboration between special education and classroom teachers for the educational growth of 2E students, opinions and information should also be gathered from preschool teachers, even though compulsory education is not a focus in Turkey. This way, the identification and resolution of issues faced by 2E students can be tracked by educational professionals throughout the process. Special education teachers can contribute to behavior interventions, particularly in collaboration with field teachers and the school counseling service, depending on the school and level of the 2E students.

Limitations

This study, while offering significant depth by exploring the views of special education teachers on twice-exceptional (2E) students, is subject to several limitations inherent to its qualitative design. The reliance on content analysis of self-reported views restricts the scope, as it does not capture the teachers' actual classroom behaviors, real-time interactions, or tacit professional knowledge in practice. These limitations should be carefully considered when interpreting the study's conclusions and informing future research efforts.

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Ethics and Conflict of Interest

Ethical approval was given for the research by the Atatürk University Educational Sciences Unit Ethics Board with (the meeting number: 12/29, and decision number: E-56785782-050.02.04-2400002251) approved this study dated 28.12.2023. The research was conducted in strict adherence to the principles of voluntary participation, participant confidentiality, and informed consent, and data were used exclusively for scientific purposes. The author declares that they acted in accordance with ethical rules in all processes of the research. The author declares that there is no potential conflict of interest in the work.

Data availability

The data that support the findings of this study are available on request from the corresponding author.

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