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Determining the Professional Development Needs of Primary School Teachers Working in Science and Art Centers [1]

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ABSTRACT

Science and Art Centers (SACs) are educational institutions affiliated with the Ministry of National Education that focus on the education of gifted individuals. In SACs, primary school teachers are responsible for implementing specialized and enriched curricula designed for gifted students in 2nd, 3rd, and 4th grades. The professional development needs of primary school teachers at SACs differ from those in regular primary schools.. However, it is essential for teachers to continue their professional development throughout their tenure and actively participate in in-service training activities. Recognizing the significance of continuous professional development in the teaching profession, this study aims to identify the areas where primary school teachers at SACs require professional development and provide recommendations for incorporating these needs into future professional development activities. The research data for this study were collected using the Classical Delphi Technique. Academicians working in the field of Classroom Education or Special Abilities, who conduct research on gifted individuals, and primary school teachers who work with gifted students participated in this data collection process. The data obtained were analyzed through descriptive analysis and content analysis. The study revealed that primary school teachers working at SACs require professional development training in various content areas, including recognizing gifted students, understanding relevant legislation, implementing enriched and differentiated education for gifted individuals, exploring education-teaching models, and fostering family involvement in the educational process. Based on these identified needs, it is strongly recommended that policy makers develop and implement professional development programs specifically tailored to primary school teachers employed at SACs.

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INTRODUCTION

Gifted students are widely acknowledged to possess superior intellectual, social, emotional, and creative abilities, necessitating environments that foster their growth. These students demonstrate advanced learning potential and problem-solving capabilities beyond their peers in the same age group. The education of gifted individuals should strive to surpass the constraints of conventional teaching approaches and unleash the full potential of these students. As a result, the professional development of teachers engaged in the education of gifted students assumes paramount significance (Gourgiotou, Katsavria & Basagianni, 2019; Rowley, 2012).

The learning and development processes of gifted students often diverge from those of their peers. Conventional curricula and teaching methods may not be sufficient to fully unleash the potential of these students, leading to challenges in sustaining their interest and motivation. Consequently, educators must provide specially tailored and enriched learning experiences to cater to the unique needs of gifted students. This necessitates continuous development of teachers' knowledge and skills to effectively address the learning requirements of gifted students (Rowley, 2012). The professional development of teachers engaged in the education of gifted students plays a pivotal role in establishing an effective learning environment, unlocking the full potential of these students, and meeting their distinct learning needs. At this juncture, well-planned and implemented teacher training programs contribute significantly to enhancing the quality of education provided to gifted students.

In order to be effective teachers of gifted students, educators must possess specific competencies. Achieving maximum efficiency for gifted students necessitates professional development and positive experiences to develop these competencies (Wycoff, Nash, Juntune & Mackay, 2003). These competencies encompass a wide range of knowledge, skills, and qualities essential for understanding and supporting the diverse learning needs of students and unlocking their full potential. Alongside academic expertise, traits like emotional intelligence, flexibility, creativity, and collaboration are also crucial for effectively working with gifted students. Teachers of gifted students should demonstrate a comprehensive range of academic knowledge and skills. They need to be well-versed in their students' individual interests and abilities, providing them with stimulating and enriched course content across various disciplines. Furthermore, teachers should possess mastery in strategies such as thought-provoking techniques, adept questioning skills, and creative thinking methods to sustain and enhance the intellectual stimulation of gifted students. Adequate knowledge of education programs tailored for gifted individuals and their enrichment is equally important for teachers (Darga, 2010). As Akar and Şengil Akar (2012) pointed out, insufficient or incorrect knowledge about gifted students and appropriate educational programs can lead to various issues. Moreover, teachers' inadequate understanding of the education of gifted children in need of special attention may result in their students facing challenges across multiple areas (Kontaş & Yağcı, 2016).

In Türkiye, the education of gifted individuals is conducted through Science and Art Centers (SAC), which operate under the Ministry of National Education. SACs serve as institutions dedicated to providing support and educational services to students gifted in general mental abilities, visual arts, or music talents. Their primary objective is to nurture and enhance these students' talents, enabling them to reach their full potential. SAC students are typically enrolled from the 1st, 2nd, and 3rd grades of primary school, and their education continues until the 12th grade. The curriculum at SAC is structured to encompass adaptation, support education, identification of individual talents, development of special talents, and project production and management training programs, respectively. Educational programs at SACs are meticulously crafted by class/branch teachers, following a student-centered and interdisciplinary approach. These programs are designed to cater to individual learning styles, differentiated to suit each student's interests, abilities, and potential. The ultimate goal is to equip students with high-level mental, social, personal, and academic skills essential for adulthood, including effective problem-solving, decision-making, and creativity. Throughout the planning, implementation,

and evaluation phases, SAC emphasizes experiential learning, encouraging students to learn by doing and experiencing real-life situations. Students are encouraged to think creatively, engage with their surroundings, conduct scientific research, and make discoveries. Special talent development programs are designed to offer comprehensive and advanced knowledge, skills, and behaviors in various disciplines, incorporating both disciplinary and interdisciplinary approaches. Values education is an integral part of SAC's educational programs, with a focus on instilling ethical principles at every stage of the students' development. Moreover, project generation and development activities serve as the foundation for all activities carried out in SAC (MoE, 2022).

The specific roles and responsibilities of teachers working at SACs are thoroughly outlined in the SAC directive (MoE, 2022). Primary school teachers hold a vital position as the first educators students encounter when they enter SAC. They play a crucial role in effectively implementing the specialized differentiated and enriched education programs designed to cater to the unique needs of gifted students in 2nd, 3rd, and 4th grades. Consequently, the professional development needs of primary school teachers at SACs may differ from those of their counterparts in regular primary schools. Primary school teachers seeking to work at SAC must undergo necessary teacher recruitment processes and require specialized training on the education of gifted individuals when they commence their duties. During their undergraduate education, these teachers typically receive minimal or no specialized courses dedicated to the education of gifted individuals, apart from those pursued based on their personal interests. While an orientation program is annually conducted by the Department for the Development of Special Abilities under the General Directorate of Special Education and Guidance Services of the Ministry of National Education for teachers appointed to SACs, there is no formal assessment by the ministry to determine whether new SAC teachers possess the necessary competencies or if additional professional development is required in this regard. Dağlıoğlu (2010) emphasizes that, in addition to pre-service university education, it is of utmost importance to ensure the effectiveness and success of teachers' educational and training endeavors by offering specialized training during their service tenure. Continuous professional development plays a critical role in equipping teachers with the necessary expertise to effectively address the distinctive needs of gifted students.

As per Article 25 of the SAC Directive, the education program for gifted children should be developed to cater to individual learning needs, guided by teachers. Additionally, Article 39 of the same directive mandates that teachers must prepare education programs in line with the center's education model and objectives (MoE, 2022). Within the framework of this directive, teachers working in SACs are required to adhere to the existing education and training programs related to gifted children's education. They are also expected to be familiar with the studies conducted with these children on both national and international levels. Moreover, teachers should implement educational practices and instructional designs that cater to the students' needs by conducting differentiation and enrichment activities, incorporating all the acquired knowledge and expertise.

Amidst numerous national and international studies on the education of gifted students, scant attention has been directed towards exploring the professional development needs of teachers who undertake the educational responsibilities of these gifted learners (Fraser-Seeto, Howard & Woodcock, 2014). Teachers involved in gifted education are expected to stand out positively compared to their peers, demonstrating superior knowledge, abilities, and competencies (Chan, 2001). In our country, there appears to be a lack of emphasis on addressing the educational and professional development needs of teachers working with gifted children (Gökdere & Çepni, 2004). Remarkably, teachers at SACs often graduate without undergoing comprehensive training, except for graduate education, on the education and characteristics of gifted children during their pre-service education (Gökdere & Çepni, 2004). Furthermore, research reveals that teachers in these centers exhibit deficiencies in areas like project-based teaching, special education, and the evaluation of gifted students (Altun & Vural, 2012; Gökdere & Küçük, 2003). Moreover, the dearth of effective and adequate professional development

opportunities for teachers working at SACs is well-documented, with prepared professional development programs being deemed insufficient (Şahin et al., 2023). The findings of this study carry significant importance, as they have the potential to provide invaluable insights for both practitioners and policymakers regarding the content that should be incorporated into the professional development of primary school teachers at SACs.

METHOD

The problem in question is based on the lack of continuous professional development opportunities for primary school teachers working in Science and Art Centres (BİLSEM) and their inability to meet the special educational needs of gifted students effectively. This study employed the classic Delphi technique to identify the professional development needs of teachers working at SACs. The Delphi technique is a method that utilizes questionnaires to seek consensus among experts with diverse viewpoints. The primary objective of the Delphi technique is to achieve a collective agreement among experts on a specific topic. However, the unique aspect of this technique is that the experts involved do not convene in person during the process. Instead, their opinions are gathered and exchanged through Delphi questionnaires, facilitated by a moderator who guides the discussion.

The classification of the Delphi technique within the realm of research designs is a subject of debate among scholars (Kart, 2022). While some researchers assert that the Delphi technique possesses distinct characteristics of its own (Wellington, 2015), others argue that it can be classified as a quantitative, qualitative, or mixed design (Avella, 2016). Furthermore, there are divergent views on the optimal number of rounds of sequential questionnaires to be sent to panelists and answered in order to achieve consensus through the Delphi technique. Nevertheless, existing research suggests that conducting two or three rounds would be adequate for attaining consensus (Hasson, Keeney & McKenna, 2000).

Important limitations and assumptions should be taken into account during the research. In particular, the results of our research were influenced by the selection of the sample, the level of experience of the panellists and their impact on the level of cooperation. This may lead to potential limitations in generalising and validating the results. There are also assumptions inherent in the Delphi technique as it assumes consensus among experts, which is not always guaranteed. The use of more rounds may lead to a greater degree of consensus among the panellists, but this may have an impact on the ability of the research to overcome time and resource constraints.

The Delphi technique is a research technique used to elicit expert opinions and consensus building. There have been no evaluations of the validity and reliability of this technique in the traditional sense, but there have been a number of improvements.

First, the panel of experts was selected carefully, and the level of experience and expertise of the experts was considered. More than one round was used in the research. At the end of each round, the panellists were provided with feedback from the previous round. Anonymity was maintained and the panellists were encouraged to be open.

Participants

The study utilized the classic Delphi technique, conducting data collection through two rounds. The participants encompassed both academics engaged in research on gifted education and school education, as well as primary school teachers working with gifted students. To identify the academic participants, emails were sent to scholars listed in YÖK's (Higher Education Council) academic database, with a focus on those specializing in the education of special talents and gifted students in school education. The academics who willingly volunteered to participate constituted Expert Group I, forming the panel list group. Similarly, emails were sent to teachers employed in institutions where the researchers were based to identify teachers working at SACs. Those teachers who expressed their willingness to participate comprised Expert Group II, serving as panelists. The study group consisted of

a total of 16 participants, comprising 2 academics from Expert Group I specialized in classroom pedagogy, 4 academics from Expert Group I involved in gifted education, and 10 primary school teachers from Expert Group II actively working at SAC. Detailed information about the panellists is provided in the table below:

Table 1: Pannellists Detailed Information

Panelist Name	Area of Expertise	Institution (University/MoNE)
CEA1	Primary School Education	University
CEA2	Primary School Education	University
SGEA1	Gifted Education	University
SGEA2	Gifted Education	University
SGEA3	Gifted Education	University
SGEA4	Gifted Education	University
T1, T2, T3, T4, T5, T6, T7, T8, T9, T10	Primary School Teacher	MoNE

Research Instruments and Processes

The data collection tool employed in the study was derived from Akar's (2015) thesis, which explored the competencies of primary school teachers supporting gifted students in regular education classrooms. This data collection tool, named the professional development needs assessment form, comprises five sections and 14 questions. These sections are structured around field-specific basic knowledge, professional principles and ethics, collaboration and support, regulations and measures, as well as classroom management and atmosphere. Each question was rated on a scale of 1 to 7, with 1 indicating strong disagreement about the necessity of professional development activities for SAC primary school teachers on the subject, and 7 signifying strong agreement regarding the importance of participating in such activities. After grading the 14 statements, participants were invited to propose topics or fields of study for professional development activities corresponding to each item.

The validity of the data collection instrument was ensured through a review by experts and academics. Contextual validity was ensured by expert review of the tool. The data collection tool was subjected to a rigorous review by experts in the field and was revised where necessary. To increase the reliability of the data collection tool, a pilot study was conducted and the feedback received from the participants was considered. The feedback received from the participants confirmed that the measurement tool was clear and consistent in its use.

A detailed process was used to analyse the datad. The data collected in the first round was processed using analytical methods. This was done to assess the views of the participants and identify specific training needs. This process involved categorising the data, identifying similar themes and making sense of these themes. The data from second round was updated based on the results of the first round and included additional views of the participants. The second round data was compared with the first round data, allowing additional information to be extracted, thus providing a richer and more comprehensive analysis of the results. This detailed analysis of the data increases the reliability and validity of the research findings.

The data collection was the subject of a detailed analysis process. In the first stage, the collected

data were analysed in detail and divided into thematic categories. These categories were chosen carefully to reflect the main themes contained in the data. As part of the categorisation process, appropriate codes were created that reflected the research model and purpose. For example, academics working in the field of classroom education were represented by specialised codes such as 'CEA1' and 'CEA2'. Similarly, experts in the field of gifted education were identified by codes such as 'SGEA1', 'SGEA2', and primary teachers working in SACs were represented by codes such as 'T1', 'T2', etc. This coding system allowed us to categorise the data in a more meaningful and organised manner.

These codes and categories were then used to further analyse the data. This stage involved breaking down the data within each category into more detailed sub-categories. This gave us a better understanding of the data and the opportunity to explore participants' views in more depth. The research findings became richer and more comprehensive as a result of these analyses. Conducting the data analysis process in such a detailed and systematic way strengthened the reliability and validity of the research.

FINDINGS / RESULTS

Below are the findings obtained from the data collected in the study, listed in order.

The answers to the first research question, *"Which training do you think a primary school teacher working in a Science and Art Center should receive about understanding special talent and being gifted?"* are presented in Table 1.

Table 1. *The answers to the question "What training do you think a primary school teacher working in a Science and Art Center should receive about understanding special talent and being gifted?"*

Categories	Descriptions
Interactive/Applied Education of Specially Gifted Individuals	• It is essential to provide education specifically tailored for specially gifted individuals. This education should encompass various aspects, such as defining giftedness, methods for identification, and a comparison of practices in both national and international contexts (T1). • Although the training courses offered under the umbrella of gifted education do cover the subject of giftedness and understanding it, they could benefit from being more comprehensive. The inclusion of case studies could be an effective way to delve deeper into the topic (T10). • The importance of going beyond basic introductory level training and offering students opportunities for practical application through case studies (SGEA2). • The provision of interactive training enriched with real-life experiences to facilitate the discovery of gifted students within formal education classrooms (SGEA4).
Giftedness and Intelligence Theories Education	• Theories of intelligence and giftedness should be interconnected with the specific traits of gifted individuals, allowing for a more comprehensive understanding of their giftedness (SGEA1). • Offering trainings dedicated to comprehending the concept of giftedness and its distinctive characteristics (T4). • SAC primary school teachers whose training on giftedness might be limited. As a result, these teachers may perceive all diagnosed students as uniform and find it challenging to analyze individual differences, both positive and negative aspects of giftedness. Consequently, it might be difficult for them to identify which characteristics are displayed by each individual gifted student (T2).
Activity preparation training tailored to grades	• Trainings could be beneficial in addressing strategies for handling failure, ways to boost motivation, and ensuring attendance. Additionally, the training could encompass techniques for designing activities tailored to different levels of students' abilities (T5).
Psychology of the Specially Gifted	• It is crucial for primary school teachers working with gifted students to receive training from experts in the field of psychology of gifted students. Additionally, they should be provided with moderator support during the training process. Access to relevant resources on the subject should also be made available to them (T8).
Training of Twice Exceptional Students	• The inclusion of case studies in the training. Additionally, conducting in-depth evaluations based on examples for twice exceptional students could enhance the effectiveness of the training (T7).
Creativity Training	• Training centered around fostering creativity could be highly effective in

	addressing the needs of gifted students (T9).

According to Table 1, the participants emphasized that a primary school teacher employed at a SAC should undergo comprehensive training to effectively cater to gifted students' needs. This training includes interactive and practical approaches to gifted education, instruction on giftedness and intelligence theories, preparation of activities suitable for different proficiency levels, understanding the psychology of gifted students, handling the education of twice-exceptional learners, and fostering creativity.

Furthermore, the descriptions suggest that social support training would be beneficial to identify gifted students and enhance their motivation.

The answers to the second question of the study, *"What training do you think a primary school teacher working in a Science and Art Center should receive about understanding special talent and being gifted?"* are presented in Table 2.

Table 2. *The answers to the question "What training do you think a primary school teacher working in a Science and Art Center should receive about understanding special talent and being gifted?"*

Categories	***Descriptions***
Recognizing Gifted Students	• In order to understand the characteristics of gifted students it is crucial to observe them through training sessions that include situational scenarios and videos (SGEA4). • Student recognition cards can be devised for practical use. Each card can detail the specific behaviors and characteristics exhibited by a student on one side, with explanations of suitable approaches and interventions on the other side (T2). • Teachers can be encouraged to analyze academic studies on the characteristics of gifted children and provide their own reports based on these studies (SGEA3).
Cognitive / Affective / Social Development Training	• Research theses that delve into the cognitive, affective, and social aspects of gifted children's developmental stages can be presented (T1). • Comprehensive training sessions can be conducted to explore the characteristics, needs, and social as well as personality development of gifted children (T4).
Case Study	• Various activities centered around brainstorming and problem-solving can be implemented. However, I believe the key aspect is the ability to engage in case studies (SGEA3).
Field Visits	• Teachers can gain direct insights into student characteristics by conducting focus group interviews with their peers during field visits, utilizing the information provided by fellow teachers (T6).
Portfolio Training	• Portfolio training is essential. It involves gathering comprehensive information about the child's self-expression in various aspects, establishing communication with relevant departments to obtain detailed data, and determining the portfolio content with a global perspective and purposeful approach (T1).

According to Table 2, the participants emphasized that a primary school teacher working in a SAC should undergo training in recognizing gifted students, cognitive/affective/social development, case studies, field visits, and portfolio preparation.

The answers to the third question of the research, regarding the necessary training to ensure a primary school teacher's command of the legislation on SAC processes, are presented in Table 3.

Table 3. *The answers to the question "What training should a primary school teacher working in a Science and Art Center receive to ensure their command of the legislation on Science and Art Center processes?"*

Categories	***Descriptions***
SAC Legislation / SAC Processes	• New teachers joining SAC can receive introductory training regarding the legislation to familiarize themselves with the subject (T4). • It is crucial to provide comprehensive training to ensure that teachers have a strong

	command of the legislation (T5). • Organizing a series of seminars that extensively cover the legislation can be beneficial; nevertheless, I believe that hands-on experience and guidance from more experienced teachers will be the key to enhancing the teachers' understanding and implementation of the processes effectively (T6).
Involvement in Diagnostic Processes	• Considering that some SAC primary school teachers are excluded from the system during the student selection exams for SAC, I have significant concerns about the effectiveness of this practice in our country. To address this issue, it is crucial for exam practitioners in Guidance and Research Centers and SAC primary school teachers to collaborate, meet, and exchange information (T2).
E SAC Module	• To enhance accessibility and flexibility, this training can be designed to be available online and accessible at any time. The E-SAC platform can serve as a perpetual resource for teachers to access the training materials (T8).
Not Required	• Considering the existing inadequacies in the legislation regarding the education of gifted children, I think that providing training is unnecessary. The concern is that such training could lead to criticism of the current legislation if teachers become aware of its limitations (SGEA3)

According to Table 3, the participants had varying opinions on the training courses that a primary school teacher working in a SAC should receive. While some emphasized the importance of training on SAC legislation, SAC processes, involvement in diagnostic processes, and utilizing the E-SAC Module, there were also participants who expressed that such training may not be necessary.

The answers to the fourth question of the research, "*What training should a primary school teacher working in a Science and Art Center receive about supporting talents within the framework of individual differences and adopting an understanding that meets the needs?"* are presented in Table 4.

Table 4. *The answers to the question "What training should a primary school teacher working in a a Science and Art Center receive about supporting talents within the framework of individual differences and adopting an understanding that meets the needs?"*

Categories	Descriptions
Enriched / Differentiated Education and Current Teaching Strategies Training	• Enriched and differentiated education practices are essential in this context. To achieve this, teachers should first establish a deep understanding of each student and be capable of tailoring educational interventions based on what the student should know, understand, and achieve (T3).
Training on Discovering Differences	• Exploring topics such as "Individualized Education: Differentiation and Enrichment in the Curriculum" would be beneficial (SGEA2).
Scenario / Case Study Training	• Teachers should consider taking courses on current education and teaching strategies (SGEA1).
Digital Competence and Research Skills Training	• Organizing trainings on "Designing Activities to Recognize Individual Differences and Evaluating Them" is recommended (CEA1).
Student Performance Evaluation Training	• Acquiring skills to analyze student profiles can be facilitated through appropriate training (SGEA2).
Inclusive Education	• Employing impactful training methods, such as real-life scenarios and case studies, as described in the first item, can be highly beneficial (T2).

According to Table 4, the participants highlighted that a primary school teacher working in a SAC should receive various training courses to effectively support talents within the framework of individual differences and meet the needs of gifted students. These training courses include enriched/differentiated education and current teaching strategies training, training on discovering differences, scenario/case study training, digital competence and research skills training, student performance evaluation, and inclusion training.

The answers to the fifth question of the research, "*What training should a primary school teacher working in a Science and Art Center receive about being aware of his/her own professional needs (differentiation, enrichment, acceleration, etc.) regarding the education processes of gifted students in Science and Art Centers?"* are presented in Table 5.

Table 5. *The answers to the question "What training should a primary school teacher working in a Science and Art Center receive about being aware of his/her own professional needs (differentiation, enrichment, acceleration, etc.) regarding the education processes of gifted students in a Science and Art Centers?"*

Categories	*Descriptions*
Enrichment/ Differentiation/ Acceleration Training	• Teachers should attend courses focused on adaptation, acceleration, and enrichment (SGEA1). • They should receive training on differentiated and enriched education (CEA1). • It is crucial for teachers to undergo training on differentiation and enrichment, enabling them to create personalized lesson plans based on the support book activities (T7). • Application of differentiation and enrichment training is highly essential. Every teacher who undergoes this training should become competent in designing activities that embrace differentiation. This could include workshops on preparing sample lesson plans and modules (T8). • Regular and periodic training on differentiated and enriched education is necessary (T9). • Teachers can collaboratively plan differentiation and enrichment activities in workshops, discussing and refining the resulting plans as a group (T10). • Regional mini-workshops could be organized periodically, where teachers come together to develop new content through the application of differentiation strategies (SGEA2).
Micro Instruction	• Micro-teaching practices should be an integral part of these training processes. Teachers should engage in micro-teaching activities, watch videos of these sessions, and receive constructive feedback. Based on this feedback, they can work on new situations and enrich the teaching environment to meet students' needs (CEA2). • Micro-teaching is considered to be a highly effective method (SGEA4).
Professional Sharing with Experienced Educators	• Instructors with extensive experience and practical expertise, who have a real impact in the field, should share their own experiences. It is important that they have hands-on experience working with students rather than purely academic backgrounds (SGEA4). • There should be opportunities for teachers to share and transfer their professional activities with colleagues, either online or through face-to-face interactions. This training could be named "Every teacher has something to teach each other" (SGEA2).
Interdisciplinary Integrated Curriculum Model Training	• Interdisciplinary Integrated Curriculum Model (Reaps, Williams, etc.) training should definitely be taken by teachers working with gifted students (SGEA3).
Current Training Courses	• Training such as Arduino, basic electricity, intelligence games, drama, Web 2.0, and STEM are considered essential for primary school teachers at SAC (T1).
Training on Guiding Students with Special Talents	• We need training on how to guide a gifted student (T10).

According to Table 5, the participants highlighted that a primary school teacher working in a SAC should receive various training courses to be aware of their own professional needs regarding the education processes of gifted students. These training courses include enrichment/differentiation/acceleration training, micro-teaching, interdisciplinary integrated curriculum models (such as Reaps, Williams, etc.), professional sharing with experienced educators, current training courses like arduino, basic electricity, intelligence games, drama, web 2.0, STEM, and guidance of gifted students.

The answers to the sixth question of the research, *"What training should teachers receive in order to adopt the understanding of continuing the process of inclusion in a Science and Art Center education processes by working in a planned and programmed manner?"* are presented in Table 6.

Table 6. *The answers to the question "What training should teachers receive in order to adopt the understanding of continuing the process of inclusion in a Science and Art Center education processes by working in a planned and programmed manner?"*

Categories	Descriptions
SAC Sharing among the Community	• To foster collaboration and sharing of experiences, SAC departments should convene regularly at specified intervals (T1). • Enhancing the effectiveness of CIS meetings and collaborative projects is crucial (T8). • Organizing monthly province-based remote department meetings and periodic Turkey-wide department meetings can facilitate idea exchange and the sharing of implemented activities (T10).
Mentoring by Experienced Academics	• The guidance of experienced teachers is invaluable, and regular interactions with academics in the field can be beneficial (T9). • Implementing a mentoring program led by experienced teachers can be beneficial in providing support and guidance (T10). • Training sessions conducted by academics specialized in gifted education, who will lead the groups, can offer valuable support (T7). • Involving experienced academics in the field can significantly improve the efficiency of the process (T5).
SAC Teacher-School Teacher Sharing	• Facilitating joint training sessions for teachers from the same class across a city and SAC teachers can be beneficial (T1).

According to Table 6, the participants emphasized the importance of providing specific training courses to ensure the inclusion of a primary school teacher in SAC education processes. These training courses include mentorship from experienced academicians, fostering teacher-school teacher sharing, and adopting a planned and programmed approach for effective inclusion in SAC education processes.

The answers to the seventh question of the research, *"What training should a primary school teacher working in a Science and Art Center receive to facilitate coherence between a Science and Art Center education and external educational environments and programs where gifted students are involved or will participate?"* are outlined in Table 7.

Table 7. *The answers to the question "What training should teachers receive to facilitate coherence between a Science and Art Center education and external educational environments and programs where gifted students are involved or will participate?"*

Categories	***Descriptions***
Cooperation with Institutions - Collaboration Training	• Engaging in collaborative studies and joint projects with educational institutions beyond SAC is highly recommended (T8). • Establishing partnerships and conducting joint studies with other institutions that cater to gifted children, such as science high schools, can be beneficial (SGEA3). • Organization and cooperation trainings should be conducted to facilitate effective communication with experts in various fields and foster an eclectic approach to learning and research (CEA1). • A training program covering both teachers and students, similar to "Try and Do Workshops" for students, can be developed. Protocols should be established to address potential concerns and challenges faced by teachers during their participation (T2). • Participants expressed the need for greater collaboration with educational environments and programs outside SAC. While training can be beneficial, it is also important to consider this as an administrative process, and providing support to SAC administrators in this regard would be beneficial (T7).
Communication-Harmony Training Courses	• It appears that SACs in provinces other than Istanbul and Ankara encounter challenges in this aspect. For regions with limited cooperation opportunities, trainings on effective communication and establishing connections with different institutions and organizations could be provided (SGEA4). • Organizing trainings focused on teamwork, fostering harmony, and promoting a culture of sharing is essential (CEA2). • Providing trainings to enhance communication skills can be highly beneficial (SGEA2). • Implementation of consultancy and moderation activities can facilitate better collaboration and coordination (T8).
Doing Needs	• I wholeheartedly agree that conducting a needs analysis and adopting an eclectic

Analysis	approach is crucial in this process. It resembles a research study, where we seek answers to questions like "What are the requirements for students' education? Who should we collaborate with in the educational process? Who are our stakeholders?" By gathering these answers, we can employ an eclectic approach to address the challenges in the education process and fulfill the students' needs effectively (CEA1). • Starting with a needs analysis and subsequently providing academic support based on the findings is vital (SGEA3). This ensures that the support and interventions are tailored to meet the specific needs of the gifted students in SAC.
School-Family Cooperation Training	• Teachers should receive training in activity management and school-family co-operation (T5).

According to Table 7, the participants emphasized that a primary school teacher working in a SAC should receive specific training to ensure harmony between SAC education and external educational environments and programs where gifted students are involved or will participate. These include cooperation-collaboration with related institutions, communication-compliance skills, needs analysis, and school-family cooperation.

The answers to the eighth question of the research, *"What training should a primary school teacher working in a Science and Art Center receive in order to involve the family of a gifted student in the process?"* are presented in Table 8.

Table 8. *The answers to the question "What training should a primary school teacher working in a Science and Art Center receive in order to involve the family of a gifted student in the process?"*

Categories	***Descriptions***
SAC-Family Collaboration Joint Efforts	• The family constitutes one of the fundamental pillars of education. Hence, conducting family matching programs can be beneficial. For this, a SAC teacher, an academician, a counselor, and five families with 3rd-grade students are matched with a family having a 4th-grade student. Throughout the process, experts provide guidance and address challenges faced by both sets of families while sharing experiences, ultimately alleviating the feeling of isolation and fostering a sense of community (T1). • I believe that the expected level of involvement in the process has not been achieved. Offering training on collaborative activities that families can undertake together may prove valuable (T7). • It is essential to organize trainings that enhance school-family cooperation and actively involve families in assigned tasks (T7).
Family Education Program Training	• Family education programs should be implemented, providing regular training intervals to equip families with knowledge on how to offer support at home (SGEA2). • Regular family education programs can be organized to ensure continuous training and support (SGEA4).
Family-Teacher Communication Skills Training	• Teachers can be given training on communication and body language. When good communication is established with the parents, it will be easy to involve them in the process (T4).
Training for Families of Children with Special Talents	• Family training sessions should be organized under the title "Training for Families of Children with Special Talents." These training sessions should encompass not only theoretical knowledge but also practical exercises. The focus should not solely be didactic; rather, the training must be designed to foster positive attitudes, encouraging collaborative reflections that yield fruitful outcomes when we work together through the process (T6).

According to Table 8, the participants emphasized that a primary school teacher working in a SAC should undergo various training courses. These include joint efforts to be conducted in collaboration with SAC-families, training on family education programs, improving family-teacher communication skills, and receiving specific training aimed at the families of gifted children.

The answers to the ninth question of the research, *"What training should a primary school teacher working in a Science and Art Center receive about developing research skills in collaboration with researchers working with gifted students?"* are provided in Table 9.

Table 9. *The answers to the question "What training should a primary school teacher working in a Science and Art Center receive about developing research skills in collaboration with researchers working with gifted students?"*

Categories	*Descriptions*
Scientific Research Methods Training	• An extensive training on research method techniques should be implemented (T4). • There should be specific training on scientific research and examination techniques (T5). • Emphasizing the importance of skill development in scientific research methods (T10).
Postgraduate Education	• I firmly believe that all teachers, especially those in SAC, should pursue postgraduate education to specialize in this field. Therefore, our teachers should be encouraged and directed towards the postgraduate education process to enhance their expertise in gifted education (CEA1). • Teachers who are already pursuing postgraduate education can mentor their peers, involving them in research processes, and guiding them to initiate postgraduate studies. This cycle of support and mentorship should be encouraged (SGEA1).
Project Writing Training	• It is essential to provide training in project writing (T1).
Scientific Process Skills Training	• Seeking academic support in studies aimed at improving scientific process skills is crucial (T8).
R&D Training	• Including R&D (Research and Development) training would be beneficial (SGEA4).

As per the findings presented in Table 9, the respondents emphasized the necessity for primary school teachers employed within SAC to undergo comprehensive training encompassing scientific research methods, postgraduate education, project writing, scientific process skills, and research and development (R&D) programs that are specifically oriented towards enhancing research competencies alongside researchers catering to the needs of gifted students.

The answers to the tenth research question, *"What training should a primary school teacher in a Science and Art Center proactively address in-class situations that may detrimentally affect the development of gifted students' talents?"* are presented in Table 10.

Table 10. *The answers to the question "What training should a primary school teacher in a Science and Art Center proactively address in-class situations that may detrimentally affect the development of gifted students' talents?"*

Categories	Descriptions
Integrated/ Differentiated Program Training	• In the pursuit of addressing individual student needs, the implementation of a tailored curriculum (T3) becomes paramount. • The mitigation of this issue can be achieved through differentiated education, exemplified by models like the integrated curriculum and the Reaps model (SGEA3). • By offering suitable and targeted training in differentiation studies, teachers can be incentivized to actively engage in educational processes, leading to the establishment of conducive teaching environments. As a result, it is expected that potential problems causing the regression of gifted students' talents will be effectively preempted (CEA1).
Motivational Training	• Gifted individuals, accustomed to effortlessly excelling in their respective schools or classes, might harbor unrealistic expectations of similar success in SAC. Consequently, they may encounter challenges in reconciling with the actual demands of the environment. Instances of resistance to this reality could manifest as disengagement from SAC, loss of enthusiasm, discontinuation of participation, and other related issues (T2). • The effective management of gifted students' needs at SAC hinges upon the perceptive understanding of their distinctive traits by the responsible teacher. By tailoring instruction to cater specifically to their requirements, the teacher can cultivate a heightened sense of motivation within the student. Moreover, recognizing areas where the student lacks expertise, the teacher should encourage seeking guidance from appropriate subject experts rather than overlooking the student's needs (T8).
New Approaches in Classroom Management Training	• In order to enhance the quality of classroom management, it is imperative to provide training in novel and effective approaches, such as the "New Approaches in Classroom Management" (T10).

Leadership-Coaching Training	• The significance of leadership and coaching training cannot be overstated for teachers employed in SAC (T1).
Skills Development Training	• It is imperative for schools under the Ministry of Education to assume the responsibility of emphasizing individual skills, while simultaneously offering teachers opportunities for skill development through comprehensive training programs (CEA2).
Training on Using Technology	• They can receive training for using technology (T5).
Activity and Workshop Development	• Efforts should be directed towards the enhancement of activity and workshop development skills among educators, necessitating the organization of training sessions dedicated to this purpose (SGEA4).

As per the revelations in Table 10, the participants concurred that a primary school teacher working in a SAC must undergo comprehensive training encompassing integrated/differentiated curriculum training, motivation training, new approaches in classroom management, leadership-coaching, skill development, technology utilization, psychology, as well as activity and workshop development.

The answers to the eleventh research question, *"What training should a primary school teacher working in a Science and Art Center receive to effectively address challenges arising from diverse variables specific to the classroom environment?"* are presented in Table 11.

Table 11. *The answers to the question "What training should a primary school teacher working in a Science and Art Center receive to effectively address challenges arising from diverse variables specific to the classroom environment?"*

Categories	***Descriptions***
Classroom Management Training	• The provision of classroom management training in this domain leads me to believe that the incidence of problematic situations can be minimized (T6). • Classroom management training in the realm of special education is instrumental in effectively managing various variables, irrespective of specific needs, with a firm grasp on the principles of special education (SGEA3). • I hold the view that classroom management training, particularly tailored to students with special education needs, can equip teachers with the necessary skills to handle challenging situations stemming from individual differences in the classroom. I advocate for the implementation of these courses as part of the educational curriculum (SGEA4). • Emphasizing classroom management, positive discipline, and equitable practices, it is feasible to participate in relevant training courses (SGEA2).
Problem Solving Methods Training	• By utilizing case studies, teachers can gain valuable insights into various strategies for effectively addressing different challenges (T4). • To equip educators with the necessary skills, problem-solving and crisis management training can be provided (SGEA4). • Considering that certain variables may be beyond the control of both the teacher and the student, it becomes crucial for the teacher to possess strong problem-solving abilities and adaptability to novel situations. Therefore, training sessions focusing on these aspects are warranted (T8).
Training on Developing Thinking Skills	• I believe that teachers should proactively devise contingency plans (a, b, and c) for students facing difficulties. This preparation is vital as teachers must possess a diverse skill set to effectively tackle challenges stemming from various variables. These skills encompass management, critical thinking, problem-solving, creativity, and reflective thinking, necessitating the provision of pertinent training (CEA2). • In order to bolster students' abilities in algorithmic thinking, problem-solving, and the development of thinking skills, dedicated training sessions are recommended (T5).
Positive Psychology Applications in Education	• The implementation of Positive Psychology Practices in Education training holds promise in this context and can yield valuable benefits (T10).

As indicated in Table 11, the participants emphasized that a primary school teacher operating within a SAC should be equipped with training in several areas to effectively handle challenges arising from diverse variables specific to the classroom environment. The recommended training areas include classroom management, problem-solving methods, thinking skills development, and the application of positive psychology practices in education.

The answer to the twelfth research question, "*What training should a primary school teacher*

working in a Science and Art Center receive to incorporate effective methods, approaches, strategies, and techniques for the education of gifted students within a regular classroom setting?" are presented in Table 12.

Table 12. *The answers to the question "What training should a primary school teacher working in a Science and Art Center receive to incorporate effective methods, approaches, strategies, and techniques for the education of gifted students within a regular classroom setting?"*

Categories	Descriptions
Self-Regulation Training	• In this context, SAC teachers may have certain limitations, as the child's own class teacher plays a crucial role in determining the child's knowledge, skills, and attitude. Nevertheless, an effective approach could involve providing Student Self-Regulation Training (T10). • To facilitate this training, it is essential for the student to possess a high level of self-awareness. Consequently, training programs should be thoughtfully designed to support and nurture self-regulation skills (SGEA4).
Teaching Methods and Techniques Training	• To effectively employ diverse teaching methods, the teacher must possess knowledge of these techniques. For instance, if drama is to be utilized, the teacher should undergo drama training. Additionally, integrating students with unique qualities, including gifted students, into the regular classroom setting requires a thorough understanding of their characteristics and the dynamics among all students. Consequently, the teacher shoulders a substantial responsibility in this regard. While the student's giftedness is evident, it is equally crucial for the teacher to adeptly handle and support their education. (CEA2).
Inclusion/Integration Training	• Overall, it is essential for them to receive inclusive education (T3).
Effective Use of Technology, Animation, Cartoon etc. Training	• They may undergo training to proficiently utilize technology, ensuring it aligns with its intended purpose. Additionally, they can develop design skills, engage in cartooning, and explore animation techniques (T5).
Awareness Training on the Needs and Offerings of the Age	• Awareness raising activities should be carried out on the needs of the age and what it offers (SGEA3).

According to the findings in Table 12, participants emphasized the necessity for primary school teachers in SAC to undergo various essential training courses. These include self-regulation training, teaching methods and techniques training, inclusion/integration training, effective use of technology, animation, cartoon, and more, while also being aware of the developmental needs and opportunities available for their students.

The answers to the thirteenth question of the research, *"What training should a primary school teacher working in a Science and Art Center receive about creating an effective classroom climate by harnessing the talent of a gifted student?"* are presented in Table 13.

Table 13. *The answers to the question "What training should a primary school teacher working in a Science and Art Center receive about creating an effective classroom climate by harnessing the talent of a gifted student?"*

Categories	Descriptions
Differentiation/Enrichment Training	• Drawing inspiration from the adage "strength comes from unity," the training courses should be thoughtfully designed to prioritize group work, enabling each student to leverage their talents to the fullest extent. Moreover, incorporating differentiated activities and teaching techniques in these trainings is essential. Additionally, teachers should also participate in group activities during these training sessions (T4). • Correct management of differentiation can lead to the resolution of this issue (SGEA2).
Effective Classroom Management Training	• Thanks to the practices focused on student recognition, acknowledging differences, and implementing effective classroom management strategies, I believe that primary school teachers working in SACs will not encounter difficulties in establishing an effective classroom climate that harnesses the talents of gifted students (T6).
Training on the Characteristics of the Specially Gifted	• Enabling gifted children to build meaningful relationships with their peers through the utilization of their talents requires specialized training. It is evident that not every teacher can effortlessly accomplish this task (CEA2).
Leadership Mentoring Training	• Providing leadership and mentoring training is essential to empower teachers in guiding and supporting gifted students effectively (T3).

Activity Development Training	• Supporting teachers with the ability to recognize students cognitively, psychologically, and socially, and develop child-based activities ensures a tailored approach to meet the unique needs of each gifted student (T7).
Training on Understanding Student Psychology	• Training focused on understanding student psychology (T8).
Integration Training in Special Education	• I strongly recommend offering integration training in special education (SGEA3).
Education of Other Individuals in the Ecosystem	• To shift the perception of gifted students from being perceived as threats to becoming balanced contributors, education should be extended not only to the gifted individual but also to others within their ecosystem (SGEA4).

Based on the findings from Table 13, the participants highlighted various essential training areas that primary school teachers in SACs should undergo. These include differentiation/enrichment training, effective classroom management, understanding the characteristics of gifted students, leadership-mentoring skills, activity development, comprehension of student psychology, integration in special education, and training related to engaging with other individuals in the ecosystem.

The answers to the fourteenth question of the research, *"What training should a primary school teacher working in a Science and Art Center receive to effectively manage the behaviors of gifted students in the classroom environment that might impact the teaching-learning process?"* are provided in Table 14.

Table 14. *The answers to the question "What training should a primary schoolteacher working in a Science and Art Center receive to effectively manage the behaviors of gifted students in the classroom environment that might impact the teaching-learning process?"*

Categories	Descriptions
Classroom Management of the Gifted / Classroom Behaviors of the Gifted Training	• Organizing a training environment that includes sample events and scenarios related to classroom management, along with discussion sessions to find effective solutions to problems, can be an impactful approach for providing training (T4). • I firmly believe that applied trainings specifically focused on classroom management for gifted students will be highly effective in handling their behaviors within the learning-teaching process (T6). • Providing dedicated trainings on the classroom behaviors of gifted students can also contribute significantly to enhancing their classroom experience (T10).
Education of the Gifted - Experience-Material Sharing with International Platforms	• Establishing an international gifted education platform offers a valuable opportunity to promote collaboration and knowledge sharing. Through official agreements with educational attachés from various countries, valuable professional experiences can be exchanged in an international context. This platform can facilitate online meetings, material sharing, and joint activities to enrich gifted education practices (T2). • To foster a deeper understanding of diverse gifted education practices worldwide, organizing teacher mobility programs can be immensely beneficial. Enabling teachers to visit different educational institutions and observe various approaches in action enhances their expertise and enriches their perspectives (SGEA4).
Effective Communication Methods	• They should receive training on effective communication methods (T5).
Efforts in Collaboration with the Counseling Service	• It is essential to offer training programs in cooperation with the student counseling service (T8).
Drama Training	• Drama training will significantly enhance the teacher's capabilities and effectiveness (T5).
Emotional, Social Agility Training	• Training programs can be designed to include content that supports individuals' self-regulation skills while offering necessary assistance to elevate their emotional and social agility levels (S7).
- Training in applied behavior analysis	• They should be offered training in applied behavior analysis (SGEA3).

Based on the findings presented in Table 14, the participants advocated for specific training recommendations for primary school teachers in SACs. These recommendations encompassed diverse areas such as classroom management tailored to the needs of gifted students, classroom behaviors exhibited by gifted students, engaging in knowledge sharing with international platforms dedicated to gifted education, honing effective communication techniques, undertaking collaborative studies with

the guidance unit, incorporating drama techniques in teaching, nurturing emotional intelligence, developing social agility, and applying behavior analysis principles in managing the behaviors of gifted students.

DISCUSSION, CONCLUSION, RECOMMENDATIONS

The present study aimed to identify the professional development needs of primary school teachers employed in SACs. To achieve this goal, a two-round classical Delphi technique was employed. The research involved posing questions to an expert group and analyzing their responses. Based on the expert opinions and the subsequent data analysis, the following results were obtained:

Primary school teachers working in SACs should receive the following training to address their professional development needs;

- Practical training focusing on educating gifted individuals, covering topics such as understanding special talent and giftedness, special talent and intelligence theories, preparing level-appropriate and creative activities, addressing the needs of twice exceptional students, and exploring the psychology of gifted individuals;
- The ability to recognize the characteristics of gifted students through comprehensive training in cognitive, affective, and social development as well as gaining valuable insights through portfolio training, case studies, and field visits;
- Training on SAC legislation and processes, including diagnostic procedures and mastering the e-SAC module for gifted students;
- Enriched/differentiated education in supporting talents and adopting a need-based approach within the framework of individual differences, current teaching strategies training, exploring differences, scenario/case study training, digital competence and research skills training, student performance assessment and inclusion training;
- Enrichment/differentiation/acceleration training on being aware of their own professional development needs, micro-teaching, professional sharing with experienced educators, interdisciplinary integrated program training, training on guiding gifted students;
- SAC department sharing, mentoring of experienced academicians, SAC teacher-school teacher sharing activities in order to foster the understanding of continuing the process of inclusion in SAC education processes by working in a planned and programmed manner;
- Cooperation-collaboration training with institutions, communication-compatibility, needs analysis and school-family cooperation training to ensure harmony between SAC and non-SAC programs;
- SAC-family cooperation on involving the family in the process, family education programs, family-teacher communication skills, education for families of gifted children;
- Comprehensive training in scientific research methods, postgraduate education, project writing, scientific process skills, and conducting research and development work in collaboration with researchers. Scientific research methods in working with researchers, graduate education, project writing, scientific process skills, R&D training;
- An integrated/differentiated program to eliminate classroom situations that may cause gifted students' talents to atrophy, motivation, new approaches in classroom management, leadership/coaching, skill development, using technology and activity-workshop development training;
- Classroom management in special education to cope with problems that may arise from different variables specific to the classroom environment, problem solving training, thinking skills

development, training on positive psychology applications in education;

- Awareness training on self-regulation, teaching methods and techniques, mainstreaming/integration training for the education of gifted students in the regular classroom environment, technology and what the age offers;
- Differentiation/enrichment in creating an effective classroom climate, effective classroom management, gifted education, leadership/mentoring education, activity development, understanding student psychology, integration education in special education, education of other individuals in the ecosystem;
- Classroom behavior training of gifted students in terms of behavior management, experience sharing with international platforms on gifted education, effective communication methods, drama training, emotional/social agility training and applied behavior analysis training.

Educators undergo a series of comprehensive training programmes designed to enhance their ability to provide effective education for gifted and talented students. These programmes cover a wide range of topics, from understanding the theories of giftedness and intelligence to the development of creative activities tailored to different ability levels. The training also addresses the complex needs of twice-exceptional students and delves into the psychological aspects of giftedness. In addition to cognitive, affective and social development, educators gain practical insights through portfolio training, case studies and field visits.

In addition, educators are trained in the legal framework and operational procedures related to special education and counselling (SAC). This includes diagnostic procedures and the competent use of e-SAC modules for gifted students. The training focuses on promoting cooperation and collaboration with different educational institutions, improving communication and compatibility, conducting needs assessments and strengthening the relationship between schools and families. Families are encouraged to get involved, with programmes designed to educate families about the needs of gifted children and to improve communication between families and teachers. In addition, educators receive extensive training in scientific research methods, postgraduate training and research project development. This enables them to collaborate with researchers to carry out research and development and contribute to the field of gifted education. The overall aim of these training programmes is to enable educators to create effective learning environments that nurture the talents of gifted students and promote their development in different educational settings.

Primary school teachers working in SACs should actively participate in various professional development training courses, as mandated by the teaching profession's principle of continuous improvement. These training courses should be offered both upon their entry into the institution and throughout their tenure. Given the unique demands of working with gifted students, it is essential for teachers to engage in comprehensive professional development activities to enhance and update their knowledge and skills. Working with gifted students and their families, who have distinct characteristics and expectations compared to traditional education settings, presents teachers with a formidable challenge. The limitations of conventional classroom environments in meeting the developmental needs of exceptionally gifted students further underscore the necessity for continuous professional development among educators.

Upon reviewing studies on in-service training needs for teachers working with gifted students, it becomes evident that there is an abundance of research focusing on various subject areas, generally encompassing all teachers at SACs. However, there is a significant dearth of literature specifically examining the professional development needs of primary school teachers. As a result, this section explored studies conducted with teachers from other disciplines to shed light on this subject. Furthermore, there is a scarcity of research addressing the support provided by primary school teachers

to gifted students in regular education classrooms (Akar, 2021).

In their systematic review research on the challenges faced by students and teachers in SACs, Şahin et al. (2023) identified issues related to the professional development of teachers. The study highlighted concerns such as inadequate professional development opportunities, shortcomings in student identification processes, insufficient experienced teachers, limited teacher competencies, communication problems with parents, and inadequate cooperation with other schools and universities. Existing literature supports the notion that professional development activities for teachers working with gifted students are essential, as they enhance teachers' knowledge levels and diversify their instructional practices (Fraser-Seeto, Howard, & Woodcock, 2014; Kontaş, 2009; Gökdere, 2004; Gökdere & Ayvacı, 2004; Gökdere & Çepni, 2004). Sezginsoy's (2007) study also underscores that the challenges in education and training arise from teachers' lack of adequate in-service training, leading to uncertainty in delivering appropriate education to gifted students in SACs. This further emphasizes the necessity of in-service training for all teachers. Collaborating with universities to develop and implement comprehensive in-service training programs is believed to enhance teachers' performance in addressing these challenges (Şenol, 2011). Based on this study, several professional development needs of primary school teachers currently working or intending to work in SACs were identified and based on the findings, the following suggestions can be proposed:

Suggestions for policy makers:

- Policy makers should design targeted modules based on a comprehensive assessment of the professional development needs of primary school teachers currently employed or planning to work in SAC.
- It is crucial to provide substantial professional development support to primary school teachers before they begin working with gifted students in SAC.
- To ensure the effectiveness of SAC's educational practices, policy makers should prioritize continuous updates and innovations in the professional development of teachers. These updates should align with the evolving needs of stakeholders and emerging trends in the field of gifted education.

Suggestions for researchers:

- Researchers are encouraged to conduct comprehensive evaluations of in-service training programs designed for primary school teachers in SACs. These evaluations should utilize diverse assessment methods and include impact analyses to measure the effectiveness and outcomes of the training initiatives.

The primary limitation of this research lies in its restricted focus on primary school teachers exclusively employed in SACs. Consequently, the findings may have limited generalizability to other educational settings and contexts. The research design also presents a limitation concerning generalization, as the involvement of only a limited number of experts and teachers may impact the broader applicability of the results and conclusions.

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