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# Educating Gifted Children in Turkey: A Retrospective Analysis and the Current State

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**Abstract**

The purpose of this study was to examine the education of gifted children in Turkey during 1923–2020 from an historical perspective and to evaluate the current practices in gifted education. Drawing from the literature review, we first report on the policies and the legal and corporate advancements implemented in the field of gifted education since the Declaration of the Republic. Subsequently, current practices in Turkey, including Science and Arts Centres, high schools for gifted students, and resource rooms, are evaluated. The results of a review of the relevant literature are discussed in the light of the current situation. In conclusion, it is understood that coherent and consistent policies in the field of gifted education have been developed more strongly in Turkey during the last 30 years, corporate advancements have also increased during this period, and scientific studies have gained an upward enhancement during the last 20 years. Despite all these advancements, it is concluded that current practices have still various deficiencies and should continue to be developed.

**Keywords**

gifted and talented children, gifted education, Turkey, education policies, history of education

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## Introduction

Today, many countries have started to give greater importance to the education of gifted children. Turkey is moving toward becoming one of these countries. Practices and scientific research in this field are also becoming widespread. Revealing the potential of gifted children depends on the development and implementation of appropriate teaching strategies (Maker, 2001; Sak, 2017; Tomlinson, 2014; VanTassel-Baska & Brown, 2007). It has been stated that the academic success of gifted children will increase when they are allowed to develop their potential in education adapted to their needs (Reis & Renzulli, 2010). Gifted children should therefore be supported throughout their development process in order to be able to achieve their potential success (Subotnik & Rickoff, 2010; VanTassel-Baska et al., 2009).

Different models have been applied for supporting gifted children in Turkey throughout history. Before the Republic, gifted students were educated in the Enderun School in the Ottoman Empire during the 15$^{th}$ century (Akarsu, 2001). Mustafa Kemal Atatürk, the founder of the Republic of Turkey, introduced historical firsts in the field of gifted education by making plans for raising the brainpower required for the restructuring of the Turkish Republic. After the first year of the Republic, a lack of qualified personnel in fields of modern education started to be felt. To overcome this situation, gifted but economically deprived students were sent to schools in Europe for higher education in various fields (Ataman, 2019). The education of gifted students began to become a current issue in Turkey after this start. In this study, the education of gifted children in Turkey covering the period 1923–2020, almost a century, will be discussed from an historical perspective and the current practices in gifted education will be evaluated.

### *Education Practices for Gifted Children During 1923–2020*

Following the proclamation of the Republic, the State of the Republic of Turkey started looking for remedies for the education of gifted children. Law No. *1416: Regarding Students to be Sent to Foreign Countries* was passed in 1929. Within the scope of this law, it was intended that talented young people should be sent to study abroad and then return to their country and to act in the development of the country (Çitil, 2018). In the first published article of the Law. 3, it was stipulated that *the students to be sent abroad are expected to be superior to other students in terms of intelligence and character*. Thereby, gifted students were sent abroad for education during the first years of the Republic.

Although Turkey was not a developed country in the 1940s, it was one of the countries at that time which realized the importance of gifted children. Precisely because of that, the Turkish State enacted a privacy law in 1948 for two talented girls. For the first time, the education of the gifted was legally secured with the law known as the 'Prodigy Children Law' (*Law on Sending Idil Biret and Suna Kan to Foreign Countries for Music Education*) (Altunya, 2006). Minor advancements in the practical

field continued in the 1950s when another legal development occurred. The aforesaid law was replaced by Law No. *6660: State Education of Children with Extraordinary Talent in Fine Arts* in 1956 (Çitil, 2017). Seven years after the enactment of the law, a regulation was invoked. About 20 important artists were educated under this law until 1978 (Ataman, 2007).

The 1960s were years when practical steps were being taken in the field of gifted education in Turkey. Special education classes were opened for gifted children in Ankara led by the Ankara Guidance and Research Center and the Gazi Education Institute (Cevher-Kılıç, 2015), and by the middle of the 1960s, private class practices had started at the primary school level. However, it can be stated that the termination of these practices without any justification by the Ministry of National Education (MNE) in 1968 disrupted gifted education because in those years, there was no alternative arrangement offered for gifted students other than these practices (Çitil, 2018).

Despite this negative decision, a science high school for students talented in the fields of science and mathematics was founded in Ankara in 1964 for educating the scientists who Turkey needed during those years (Enç, 2005). Ankara Science High School was founded with the support of the American Ford Association and the cooperation of Ankara University, the Middle East Technical University, and the MNE (Ataman, 1976; MNE, 2013). The teachers selected for this high school were trained at Ankara University and Florida State University. Another indirect but significant development regarding gifted education took place in the second half of the 1970s. Following the foundation of science high schools, Anatolian high schools with a special emphasis on foreign language emerged in 1975 for students selected after primary school on the basis of their knowledge test results. These schools were designed to deliver a seven-year program, comprising one year of preparation after primary school, three years of secondary school, and a further three of high school. The teachers at these schools were elected and the schools served as the best schools in Turkey for a long time. In many studies conducted in the field of gifted education, the Anatolian High Schools are regarded among the institutions which served gifted students (Baykoç, 2014; MNE, 2013).

The 1970s were years of internal turmoil in Turkey with frequent changes of government and escalating political and social tensions. Turkey entered a new era after the 1980 military coup. One of the main features of this era was the change of the Constitution. With the enactment of the 1982 Constitution, some changes occurred in the general structure of the State. Regulation on Special Education Schools was enacted in these years. Giftedness was defined for the first time in this regulation. In the sixth article of the regulation, a dual definition was given under the title of grouping children with special educational needs. Accordingly, gifted individuals were defined as: "those who have an intelligence section of 130 and above continuously in various scales" and talented individuals were defined as "those whose intelligence section is always 110 and above in various scales and who are significantly superior to their peers in various disciplines such as fine arts, technical and similar fields" (MNE,

1991). Despite these definitions, no new practices were implemented. Thus, the 1980s were a barren period in the education of gifted children.

In the early 1990s, a well-attended Special Education Council, which was the determinant of the country's special education policies and was organized by the MNE, convened for the first time. A total of 28 decisions were taken by the council about gifted individuals and their education (Çitil, 2018). In the 1990s, another important development took place in the field of gifted education. A businessman named Sezai Türkeş established a foundation to honor the memory of his wife for the education of gifted students with limited financial resources. After that, the Private Inanç High School was opened in Gebze, Kocaeli in 1993. The school had initially served as a secondary school and high school and continued its activities only as a high school when eight-year uninterrupted education was introduced in Turkey. The school was assigned to the Turkish Education Foundation in 2002 and was renamed the Turkish Education Foundation Private Inanç High School (Akarsu, 2004). The Ministry of Education took a very important step in 1995 when Science and Arts Centers (BILSEM) started to be established as institutions that provided after-school education to gifted students (Baykoç, 2014). Today, these institutions are regarded as equivalent to the concept of giftedness and are still active. Other advances related to gifted students also took place at the end of the 1990s. Fine Arts High Schools started to be established in 1996 to meet the educational needs of specially talented students in fine arts in line with their abilities (MNE, 2013; TBMM, 2012). These schools selected students by subjecting them to aptitude tests with a specific grade point average. Similarly, following this initiative, different school types were established for talented students in sports and social sciences in the following years (Çitil, 2018). As can be seen, the 1990s were years that contributed to the rise of gifted education.

The Regulation of Special Education Services was enacted by the MNE in the early 2000s. Identification of individuals with special needs, educational institutions, and the principles of the educational services was designated within the scope of this regulation. However, one of the most radical changes took place in 2006 because of the inadequacy of many aspects of the regulation in many aspects. The regulation was amended in 2009, 2010, and 2012 and took its final form in 2018 (MNE, 2018a). All special education services in Turkey are carried out within the framework of this regulation. Identification of gifted students, their education, and the operation of BILSEM was included in the legal framework by this regulation.

One of the most important advancements of the 2000s was the work done in universities. A Gifted Education Department was established for the first time in Istanbul University, Department of Special Education in Turkey. A program entitled Teacher Training for Gifted Students was started in October 2002 by this department. However, the lack of plans and preparations on the part of the MNE led to significant problems regarding the employment of graduates from this program (Çitil, 2018). In 2016, the Council of Higher Education decided to combine the undergraduate education given separately as Teaching of Mentally Disabled, Auditory Impaired, Visually Impaired, and Gifted/Talented Children as a new undergraduate program under the

name of "Special Education Teaching." Following Istanbul University, a new department was established in Anadolu University in Eskişehir in 2007 (Çitil, 2017). This department also made significant contributions to the field of gifted education. The Education Programs for Talented Students (EPTS) pioneered by Sak, the founder of the department, came into effect in Eskişehir in the 2008 academic year (Sak, 2011, 2013, 2017). The aim of this program was to provide a differentiated and accelerated education program to gifted students as well as providing training, guidance, and consultation services to their parents. After Istanbul and Anadolu University, departments of gifted education were established in other universities.

Despite the emphasis on inclusion practices in the 2000s, it is understood that the diversity of schools specific in the field started to increase at the secondary school level. Social Sciences High Schools started to be opened in 2003 and Sports High Schools in 2004 (MNE, 2013; TBMM, 2012). Another significant development in the 2000s was the organization of the First National Gifted Students Congress. Following this, the initiative continued and the sixth National Gifted Students Congress was organized in 2019. Research centers on gifted education were also established at some universities since the early 2000s (MNE, 2013). These centers contribute to both society and the universities through various practices and scientific projects. In addition, some universities have established children's universities and some municipalities have established science centers in recent years (TBMM, 2012). So the field of gifted education in Turkey has begun to find a stronger foundation scientifically.

In the early 2000s, the goal of the new government to double national income per capita increased the importance of gifted education. In 2012, a parliamentary investigation commission consisting of deputies was established on the education of gifted children. The commission carried out studies on the education of gifted children both in Turkey and in other countries for six months and issued a very detailed report covering the current situation, problems, and recommendations (TBMM, 2012). However, in the following years, no significant steps were taken due to national and international issues. Even so, it can be said that the number of Science and Art Centers, studies, and practices on gifted children has increased significantly in the last 20 years. Moreover, gifted individuals were examined under a separate title, 15 goals were set, and the identification and education of gifted children came to the fore again in the MNE's 2023 Education Vision document (MNE, 2018b).

## *Current Education Models*

Different models can be seen in the current gifted education practices in Turkey. BILSEMs, which provide after-school gifted education and are currently highly associated with gifted education in the country, are the first institutions that come to mind. There are Science High Schools in the field of science, Social Sciences High Schools in the field of social sciences, Fine Arts High Schools and Music and Performing Arts High Schools in the field of the arts, and Sports High Schools in the field of sports at the high school level. The Gifted Education Program established by the Anadolu

University Department of Gifted Education with the support of the university is another practice. Finally, there are the Resource Rooms that have just started to be implemented in all schools. These practices and schools are briefly described below.

## Science and Arts Center (BILSEM)

The Science and Arts Center is a special educational institution that was established to provide gifted children at the age of primary and secondary education to improve their capacities, and be aware of and use their abilities at the highest level (Bildiren, 2018a). According to MNE 2019 statistics, there are 160 BILSEMs in Turkey. Primary school students are nominated to the centers by their classroom teachers via observation forms used for the identification of gifted children. Students who perform equal to or above the criteria in group screening are assessed individually with the objective and standard measurement tools in line with the criteria determined by the Ministry and gifted students are identified (MNE, 2019b). The number of children nominated across the country is increasing every year. In 2018, 896,537 first-, second-, and third-grade students at primary school were nominated by their teachers in Turkey. Currently, 65,095 students are educated in this institution which has been in service since 1995 (Hürriyet, 2019). In BILSEMs, a project-based, interdisciplinary, enriched and differentiated education program compatible with the abilities of the students is applied to produce original products, projects and outputs and educational activities are organized (MNE, 2019b).

## Science High Schools

Ankara Science High School was established to educate gifted children in science and mathematics to be the scientists and researchers that the country needs (Ataman, 1976; Enç, 2005). Science High Schools initially served that purpose but then, with the change in identification and the education program, the value of providing education to gifted children became debatable (Bildiren, 2018a). Students with superior performance in the High School Entrance Exam (LGS), administered nationally in Turkey, can be students of Science High Schools based on their preferences. According to MNE 2019 statistics, 122,352 students are enrolled in 310 Science High Schools.

Various additional mathematics and science courses are included in the curriculums of these schools in comparison with normal high schools. Unfortunately, individualized or differentiated programs based on the students' pace or interests are not implemented. Science and mathematics education is standardized in Science High Schools just the same way as in the other schools in Turkey (Bildiren, 2018a). The majority of the graduates transfer to the Faculty of Medicine, Dentistry and Pharmacy (Ayık et al., 2007). Although this result seems to be positive, it is possible for students to achieve high scores in university entrance examinations anyway. That is why these students educated in Science High Schools had the highest scores in the High School Entrance Examination. In other words, these are already successful students.

However, it can be said that Science High Schools have diverged from their foundation goal of educating scientists. Exam success has become significant rather than scientific studies.

### *Social Sciences High Schools*

Social Sciences High Schools, established with the aim of educating high-quality social scientists needed by the country, prepare students who are interested and talented in social sciences and literature for higher education (MNE, 2003). Similar to the Science High Schools, students are admitted based on their LGS examination results. In the curriculum, the weight of courses in the fields of Turkish Language, Literature and Social Sciences is higher than in other high schools. According to MNE 2019 statistics, 38,821 students are enrolled in 91 Social Sciences High Schools.

### *Fine Arts High Schools*

Fine Arts High Schools aim to enable students to gain basic knowledge and skills compatible with their interests, wishes, and abilities in the fine arts; to train them to become successful individuals in their fields; and to prepare them for higher education programs in the field of fine arts. Students are admitted to these high schools through special talent examinations (MNE, 2009). The first Fine Arts High School was founded in Istanbul in the 1989–1990 academic year (Bildiren, 2018a). According to MNE 2019 statistics, 15,502 students are enrolled in 82 Fine Arts High Schools.

### *Music and Performing Arts High Schools*

Music and Performing Arts High Schools operate in affiliation with universities and aim to train the students with special abilities and skills in the fields of music and performing arts, educate them in ways compatible with their interests and abilities, and prepare them for higher education programs which require special talent. Students are given training in string, wind, and percussion instruments and piano in the music department as well as in the ballet division of the dance branch in the performing arts department. Students are selected through special talent examinations organized by universities (MNE, 2015b). There are 13 Music and Performing Arts High Schools throughout the country with 597 students (MNE, 2019a).

### *Sports High Schools*

Sports High Schools aim to educate students in the field of sports, enable them to be successful individuals with basic knowledge and skills in their branch, and prepare them for higher education programs in sports subjects. An additional aim is to raise them as individuals who can contribute to Turkish sports and represent their country successfully. Students are admitted through special talent examinations (MNE,

2009). There are 77 Sports High Schools with 16,973 students in Turkey (MNE, 2019a).

### Resource Rooms

Gifted students can receive special education in their superior performance areas in the resource rooms of their schools. Resource rooms can be opened for gifted students at preschool, primary school, and secondary school levels. Weekly course hours for resource rooms are determined by the Individualized Education Program development department of the schools. The aim is to provide courses to gifted students in their respective abilities by way of differentiating through enrichment and acceleration. These programs are planned to be integrated with the education program implemented in the formal education institutions of the students (Bildiren, 2018a; MNE, 2015b).

### The Education Programs for Talented Students (EPTS)

The EPTS (ÜYEP in Turkish) is an after-school enrichment acceleration-based program, founded by Anadolu University Gifted Education Department with the support of Anadolu University and the Scientific and Technological Research Council of Turkey, and is the first of its kind. The EPTS was founded in 2007 and transformed into an application and research center in 2014. The general purpose of the center is to conduct scientific research studies on intelligence, giftedness, and creativity; to identify gifted students using intellectual measurements; and to provide differentiated education and guidance services that enable the students to maximize their intellectual potential. The EPTS identification model is based on domain-specific measurement of talent and uses multiple criteria for identification and sample-based identification. The EPTS curriculum model is comprised of analytical ability, creative ability, practical ability, and knowledge components. The components of analytical ability, creative ability, and practical ability are included in the first level of the model; 44 comprehensive problem-solving and thinking skills, which are the subskills of these components, are included in the second level. There are 153 subskills in the third level (Sak, 2009, 2011, 2013, 2017).

### Assessment of Current Practices

It can be seen that educational programs for gifted students are diversified in different institutions. However, these institutions have significant issues and weaknesses in understanding giftedness, identification, education, and teacher employment (Sak et al., 2015). Unfortunately, the increase in the number and diversity of institutions does not mean an increase in quality. Many programs have been terminated in the past because they were not successful. This is considered to have been caused by the inconsistency in the policies or the lack of physical resources and the manpower necessary to implement them (Çitil, 2017). Even so, it can be said that the current

level of awareness has increased, despite the fact that there have been problems compared with the past.

The opening and spread of BILSEMs resulted in increased awareness of giftedness. Before that, there was no institutional structure that could spread nationally. This led to an increase in the number of scientific studies. Although there had only been four master's and five doctoral dissertations on gifted students until 1994, these numbers reached 108 master's and 25 doctoral dissertations in 2014 (Güçin & Şahin, 2015; Sak, 2017). When the yearly distribution of articles is examined, it is seen that 241 (79.01%) articles in this field were published in the years after 2003, whereas only 64 (20.98%) were published in years before 2003 (Güçin & Şahin, 2015). Also, 55 master's and 23 doctoral dissertations were published between 2015 and 2017 (Ayvacı & Bebek, 2019). Almost all of these studies were carried out in Science and Art Centers.

The increase in the number of academic studies which started with Science and Art Centres is also reflected in the number of articles published. Research studies on the conceptions, identification, and education of giftedness increased along with the theses (Güçin & Şahin, 2015). Assessments of the current system also started in concurrence with these studies. Various studies were conducted concerning teacher assessments on the conceptions of giftedness (Bildiren, 2018b; Şahin & Levent, 2015), BILSEM teacher opinions (Kazu & Şenol, 2012), family studies (Karakuş, 2014), student evaluations (Şahin, 2013) and preservice teachers' views on the education of gifted children (Metin et al., 2017).

Since the most common institutions are BILSEMs, it is beneficial to evaluate the studies on their education programs. Sezginsoy (2007) showed that BILSEM teachers encourage students to produce new ideas and provide opportunities for them to express themselves during lessons. However, teachers consider that the physical condition of the centers is insufficient. Koçal et al. (2009) studied BILSEM teachers and found that increasing awareness of gifted education in society is the most important requirement and that permanent education programs should be developed for gifted students by cooperation between the MNE, universities, and BILSEM. Kazu and Şenol (2012) studied 24 BILSEMs and found that the teachers' opinions about the gifted education programs applied in the centers were generally positive. Even so, most of the teachers stated that they experienced problems with students' attendance and the physical conditions of BILSEMs.

In studies conducted with BILSEM teachers, it seems that the teachers are generally satisfied with the practice, but studies showing the problems which they experience in educational practices are also remarkable. Altun and Vural (2012) reported that most of the participating teachers found the professional development opportunities provided by central and local authorities insufficient. Research findings have also underlined that interdisciplinary studies on the professional development of BILSEM teachers should be emphasized. However, it was also shown that professional development opportunities should be made available in different status levels and that a variety of activities should be organized to encourage managers and teachers. Çetin and Doğan

(2018) found that teachers experienced problems in the scope and relevance of the activities and with their students' behavior, such as being careless and reluctant, physically and mentally tired, absent from classes, and displaying inappropriate behavior. The teachers also stated that there are shortages of physical equipment in BILSEMs and that they had problems with parents who misinterpret the objectives of BILSEMs and with administrative issues due to the uncertainties in the guideline. They also emphasized that they experienced issues about financial, social, and personal rights due to the working hours. Battal-Karaduman and Elgün-Ceviz (2018) found that teachers reported that students had problems in selection and placement to the institutions. It was also suggested that the number of BILSEMs should be increased because of the large numbers of selected students. Similar results were reported by Ayaydın and Ün (2018): teachers stated that the identification process should be implemented properly, and that early childhood education and follow-up of gifted students in the subsequent years should be emphasized. The teachers also pointed out the need for individual education programs and enrichment in education. The consistent point raised in these studies is the issue of the implementation of the education program. BILSEM teachers stressed that the program should be enriched and applied individually. Clearly, the existing research findings exhibit contradictions. Because gifted students do not receive the education to which they are entitled in traditional schools, they attend the after-school programs in BILSEMs. If an enrichment program is not applied properly in BILSEMs or the teachers are not qualified enough and need to learn how to offer differentiated instruction, modifications, and adjustments for gifted students, the issues raised in the findings suggest a pressing need and should be discussed in a solution-oriented way by national educational authorities.

Science and Art Centers were examined not only from teachers' points of view but also from the perspective of students and parents. Although the parents were satisfied with the education system in general, they pointed out various problems. Karakuş (2010) found that parents had various expectations about issues including the shortage of equipment and other various deficiencies of BILSEMs. Students' attendance and transport problems were also reported. Remarkable findings from that study suggest that parents felt puzzled when they were not provided with enough guidance about the students' development by BILSEMs. In a study involving the parents of 108 gifted students in BILSEMs, Çamdeviren (2014) pointed out the difficulties which parents faced regarding transport, equipment shortages, attendance, course hours, and days. Proposed solutions and expectations included increasing the duration of education at the centers, considering free transport for students to and from BILSEMs, using more advanced technological equipment, organizing activities at the weekends, and supporting formal education with contributory practices and raising the awareness of families and school teachers.

In studies of the views of gifted students in BILSEMs, both positive and negative perspectives toward BILSEMs have been identified. Bildiren and Türkkanı's (2016) study with 100 gifted students found that the students enjoyed the program, but they had problems with transport and with adapting to the teaching styles of the lessons.

On the other hand, Çelikdelen (2010) found that BILSEM students had problems in their schools. However, the findings of Atlı and Balay (2016) showed that the physical conditions of BILSEM schools were insufficient for gifted education. Language-Literature, Visual Arts and Music students stated that BILSEMs were inadequate in equipment and material. It was also stated that although the advisors (teachers) in BILSEMs work devotedly, the projects were disrupted by the change of advisors (teachers) at the beginning of each academic year. Based on the results of all these studies, even though students were generally satisfied with the education in BILSEMs, they were uncomfortable with the lack of a principled gifted policy and the psychological pressure caused by the national exams for transition to high schools and universities. Also, the shortage of time spent in BILSEMs, the deficiency of the conditions for projects, and transport problems prevented the sustainability of gifted education. Kayışdağ and Melekoğlu (2019) studied BILSEMs in 12 separate provinces and found that the courses and content in the BILSEM's programs were insufficient for students' development in creating new problems, and that students were not sufficiently informed about how they would be evaluated. It was also concluded that peer assessment was not used enough in the education process.

It can be seen that although the students had serious problems, their perspectives were positive in general. It is quite obvious that the number of BILSEMs increased between 1995 and 2020. There are more than one BILSEM in metropolitan cities and there is at least one BILSEM in other provinces and district centers. The MNE's 2019 statistics showed that the number of students was 1,564,813 in preschool, 5,267,378 in primary school, 5,627,075 in secondary school, and 5,649,594 students in high school. The number of BILSEMs is therefore insufficient. This situation seems likely to cause difficulties especially in transport for parents and students. It is also considered that the problems especially regarding the implementation of the program are caused by the lack of a standardized program. The general frameworks of the programs implemented in BILSEMs are completely left to the initiatives of the teachers (Sak, 2013).

Science High Schools which were founded in 1964 are regarded as high schools at which gifted students receive education (Türk, 2018) because the students enrolled there are those with the highest scores from the National High School Entrance Examination. However, the number of studies regarding the science high school program or the monitoring of students is limited. Although there are studies on subjects such as emotional intelligence (Koçak & İçmenoğlu, 2016), problem-solving (Aydoğdu & Keşan, 2016), perfectionism, self-esteem and leadership (Birol & Yazıcı, 2011), and geometry (Aydın & Öztekin, 2018), the number of studies on the evaluation of science high schools' education programs are extremely rare. Özoğlu's (1977) descriptive analysis of Ankara Science High School students is one of these few studies. Aydın et al. (2019) examined the learning outcomes of the secondary science high school chemistry course based on the revised Bloom taxonomy and found that the distributions of the learning outcomes were composed of cognitive process dimensions sorted as understanding with 44.44%, analyzing with 34.08%,

implementing with 8.89%, recalling with 5.19%, assessing with 3.70%, and creating with 3.70%. Based on these results, it can be said that the learning outcomes were not creativity-oriented. Türk (2018) pointed out that the 2015 Programme for International Student Assessment PISA) results showed that Science High Schools ranked third in the world with top scores above the Organisation for Economic Co-operation and Development (OECD) averages. It was also suggested that the graduates of these high schools are enrolled in faculties of successful and long-standing universities with high entry requirements, such as Medicine, Dentistry, Engineering and Architecture, Law and Pharmacy. Even so, Science High Schools are criticized in terms of gifted education. Science High Schools which were established for educating scientists have transformed into educational institutions which prepare students for the university entrance examination. Unfortunately, these schools have evolved into educational institutions which train students to take tests for exams instead of using laboratories. Sak (2017) stated that the increase in the number of science high schools gained momentum with the establishment of economic stability and the increase in economic development in the country in the early 2000s, but this also brought about the formation of an unsystematic education model in Science High Schools. It should be emphasized that the rapid increase in the number of Science High Schools led to a decrease in educational quality thereby distancing them from the qualification of gifted education institutions.

Similar to Science High Schools, it is observed in the national literature that no evidence has been presented for the evaluation of the education programs in Social Sciences High Schools. It is clear that in the Social Science High Schools founded for educating highly qualified individuals in the fields of social sciences and literature now give no preference to gifted studies (Cankar & Taş, 2017). Research into Social Sciences High Schools has been focused on subjects such as the assessment of the environmental awareness of Social Science High School students (Aydın & Kaya, 2011) and the opinions of students on the teaching of geography (Aydın, 2012), and there has been no research on the conceptions of giftedness. This can be attributed to a variety of reasons. First, the conception of giftedness has been identified in BILSEMs in Turkey. Identification in BILSEMs is provided by intelligence tests which make the process more convincing. Students identified on the basis of the High School Entrance Examination are overlooked compared with students identified by intelligence tests. Second, Social Sciences High Schools have been unable to make an impression in Turkey since their foundation. There has been no striking study in the field of social science and literature, and this has also affected high school preferences to the extent that these schools are now ranked as the least preferred schools.

Studies of gifted students in the high schools which provide education in the arts and in sport have particularly focused on the arts and sport (Birgül & Nacakcı, 2019; Polat et al., 2018; Tanrıkulu & Kahraman, 2019) and have concentrated mostly on students' expectations. Olgun (2019) studied students at Fine Arts High Schools in three separate provinces and reported that female students found the duration of the arts courses and

theoretical courses provided throughout the art education insufficient, whereas male students regarded them as sufficient. Toward graduation, the dissatisfaction of students increased and their interest in arts decreased. The students were especially dissatisfied with their workshops. Even so, it was found that the students were highly satisfied with their teachers. Also, these students generally continued their university education in the fields of arts and sports. Yerli (2019) reported that 64.9% of the students enrolled in the Fine Arts Education Department and the field of Art and Music Education had graduated from Fine Art High Schools and 74.9% of them had won their departments at their first entrance examination, whereas 77.1% of them chose the department with the intention of becoming a teacher. It was also emphasized that the students were worried about their future with the fear that they would not be employed. Studies have generally shown that the graduates want to be teachers and have a positive attitude toward teaching (İslam & İmamoğlu, 2019; Yıldız et al., 2020). The students prefer the fine arts departments of education faculties as qualifying them to be employed as teachers rather than developing their skills. This is caused by young adults' efforts to find practical solutions to their occupational anxieties. Accordingly, young people wish to have state-guaranteed jobs as soon as possible. These results have adversely affected the development of special talent in arts and sports. It can therefore be emphasized that Fine Arts and Sports High Schools are considered as schools which lead to a job rather than talent education.

Another practice in gifted education is the resource room in which additional education is provided in schools. Resource rooms are one of the most frequently used educational environments for students with special needs in primary and secondary education (Yazıcıoğlu, 2020). In Turkey, resource rooms that are generally used for students with special needs, such as mental disability, autism, and learning disability, have been used for gifted students under the provision of an MNE (2015b). The intention is to provide enrichment in education to gifted students who do not benefit from different educational institutions. This practice initially started as a temporary initiative. Pemik and Levent (2019) examined the opinions of school administrators and teachers about the education provided in the resource rooms for gifted students and found that students generally played intelligence games rather than attending differentiated education in resource rooms. Most of the participants stated that they had problems because of the lack of a specific curriculum and education plan, materials for the resource room, and insufficient physical conditions. The participants also underlined the importance of in-service teacher training by remarking that the teachers are the determinant factor in meeting the educational needs of gifted students in resource rooms. In research on teachers' opinions about the resource room practices in secondary education institutions, the lack of trained teachers, materials, and physical conditions were emphasized (Tunalı-Erkan, 2018). Supporting evidence was also provided by Çevik and Yağcı (2017) who pointed to the insufficient physical conditions and lack of qualified teachers. Another study reported that the resource rooms were beneficial and essential, although it also pointed out the problems in the functional and physical conditions of resource rooms (Yazıcıoğlu, 2020). It can be stated

that for resource rooms to serve their intended purpose, it is necessary to address the lack of trained teachers on gifted education and to provide adequate materials.

The EPTS was founded as an after-school program in Anadolu University and provides weekend and summer school programs for gifted students. Even though it is a local practice, various studies have suggested that it could become widespread on a national basis. The EPTS provides students with significant improvements in reading, creative writing, and mathematics (Sağlam-Demir & Aksoy-Pehlivan, 2013). It was also found that the social validity of the program is remarkably high (Bal-Sezerel & Sak, 2013). To widen the scope of this program nationally would strengthen its diversity and quality. It should be underlined that the EPTS is the first and the only one of its kind.

## Conclusion

Since the early years of the Republic, researches and practices on gifted education have been conducted with increasing momentum in Turkey. However, it is controversial whether it is on the right lines. First, identification of gifted students should be carried out properly to ensure the development of awareness in the right direction (Sak, 2017). Then, the quality of gifted education should be improved and professional guidance should be provided to students about occupational orientation.

Studies of gifted education have asserted that teachers' knowledge level on the definition, identification, and education of gifted children was insufficient (Bildiren, 2018b; Duran & Dağlıoğlu, 2017; İnan et al., 2009; Şahin & Çetinkaya, 2015; Şahin & Kargın, 2013). However, from its origins in the Progressive Era to contemporary debates on the concept of giftedness, the issue has remained unsolved and it has not been possible even to reach a consensus on a common definition (Kroesbergen et al., 2016). In-service teacher training can provide teachers with the ability to nominate the right students for identification. Nevertheless, teachers' knowledge level on the concept of giftedness needs to be increased. The nomination of approximately 900,000 students can be attributed to the lack of teachers' knowledge. This unbalanced distribution can be overcome by teacher training.

There is no single system generally used or perfect for identification (Callahan et al., 2012, p. 84) and the identification system agreed on is a multiple assessment approach (Hoctor, 2013; Johnsen, 2009; Schroth & Helfer, 2008). It is always important to use multiple selection criteria for giftedness as the individual identification approaches are not clear enough (Lohman et al., 2008). An identification approach that uses both formal tools (such as standardized tests) and informal tools (such as the views of teachers and family members) should be used (National Association for Gifted Children, 2015). Turkey must transform the current identification model into a more powerful system based on the results of scientific research. It is suggested that an assessment system should be used which combines multiple approaches such as teacher and parent observations, the child's products, portfolio files, verbal and nonverbal

intelligence tests, interest tests, and interviews (Bildiren, 2019; Johnsen, 2009; National Association for Gifted Children, 2015; Schroth & Helfer, 2008).

The positive effects of grouping, acceleration, and enrichment (Pallas et al., 1994; Renzulli & Reis, 1994; Tomlinson, 2014; VanTassel-Baska, 2003) on gifted children have been strongly supported by many researchers (Callahan et al., 2015; Diezmann et al., 2001; Feldhusen, 2003; Geisler et al., 2009; Rasmussen, 2006). These models should be principally implemented in the educational institutions which are BILSEMs, Science High Schools, and Social Sciences High Schools and in resource rooms. First, teachers should be trained in collaboration with universities on models such as differentiation, enrichment, acceleration, and ability grouping. After the training, follow-up sessions provided by universities to evaluate their practices will be beneficial. Second, the efficiency of practices should be examined.

Measures to develop gifted education should not be limited to gifted schools. According to the 2019 MNE statistics, there are about 18,000,000 students in Turkey. The primary school first-, second-, and third-grade students are nominated in the identification system of BILSEMs. There are likely to be potentially gifted children among these 18,000,000 students. Also, BILSEMs are institutions that provide after-school education. Gifted students spend more time in their own schools. So another area which should be improved is the general education system. It is suggested that models should be used in the general education system which will provide gifted students with opportunities for differentiation and the enrichment of programs. It should be emphasized that if we want to implement these models properly, nationwide teacher training should be carried out.

It will not easy to take measures for gifted education. It will probably take a long time for Turkey as a developing country. It will be beneficial to inform the public, education administrators, and families about the conceptions of giftedness, how gifted students should be educated and their potential contributions to society regardless of the increasing level of awareness. Targeted policies for gifted individuals should also be introduced. However, the current situation as assessed in this paper shows that there is still a long and challenging road ahead. In this long journey, it is our greatest wish that all stakeholders will try to undertake the required responsibilities with high sensitivity and a scientific perspective as well as ensuring the sustainable development of gifted education.

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