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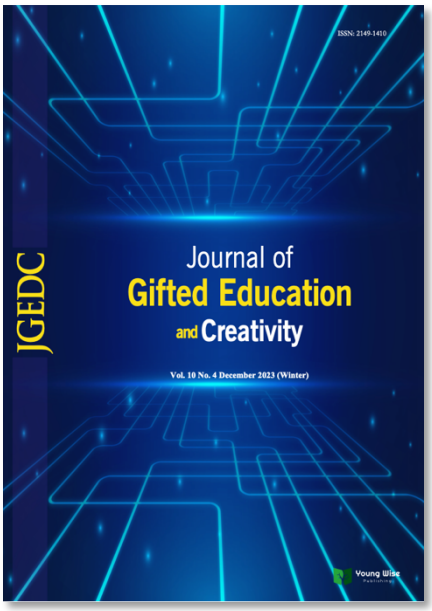

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Contents

No	Title	Pages
1	**A survey of the challenges and responsibilities of school district gifted education coordinators before and during the COVID-19 pandemic** *Keri M. Guilbault and Sarah A. Caroleo*	275-292
2	**Enhancing of college students' creativity with english digital multimodal composition** *Nur Rosita*	293-301
3	**Investigation of attitudes and self-efficacy of mathematics teachers towards gifted education** *Gülşah Saltık Ayhanöz and Zekiye Morkoyunlu*	303-318
4	**Counseling and supporting the parents of the young entrepreneur** *Hanna David*	319-328
5	**The effect of social studies teaching supported by folk songs on gifted students' self-regulation skills and retention of learning** *Şengül Korkut and Cemal Avcı*	329-343
6	**Scenario-based teaching in teaching algebra in gifted education** *Esra Altıntaş, Şükrü İlgün and Ceren Ercan*	345-361
7	**An interview with Sule Demirel Dingec: about helping parents raise gifted children** *Michael F. Shaughnessy*	363-366

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Research Article

A survey of the challenges and responsibilities of school district gifted education coordinators before and during the COVID-19 pandemic

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Abstract

District-level gifted education coordinators (DGECs) complete the critical work of overseeing and leading gifted and advanced education programs in school systems. However, only a few studies have explored what their roles and responsibilities entail (Ezzani et al., 2021; Floyd, 2023; Guilbault et al., 2022; Kennedy, 1997). Emerging qualitative research from the COVID-19 pandemic indicates that the pandemic posed unique challenges for DGECs (Guilbault et al., 2022), but quantitative information is also needed to further elucidate those challenges. The present study utilized descriptive cross-sectional methods to quantify and define DGECs' roles and responsibilities, how their roles and responsibilities changed throughout 2020-2021, and what challenges DGECs faced during the pandemic. Participants included a purposive national sample of 35 DGECs from small, medium, and large school districts in the United States. They completed an online questionnaire that was fitted to the research questions. Quantitative survey data were analyzed using descriptive statistics and 2x3 contingency tables with subsequent Pearson's chi-square tests of independence to examine how roles and responsibilities changed over three different time points: prior to COVID-19, during the spring 2020 semester, and during the spring 2021 semester. Results suggest that instructional leadership duties (such as overseeing district identification processes) and program management duties (like developing and revising policies, handbooks, and procedures) were the most common types of roles and responsibilities shared across the sample, while communication and collaboration duties were less widespread. Throughout the pandemic, duties that required face-to-face interactions and communication (e.g., observing teachers, in-person professional development, and parent informational nights) were most negatively impacted. Conversely, the provision of virtual professional development, overseeing district identification processes, and reporting of activities to the state department of education increased throughout the 2020-2021 school year. Furthermore, results revealed high levels of stress among the DGECs with a majority of them considering leaving their role. Major leadership challenges included the following: adapting to constant changes to policies and procedures, delivery of professional learning, gaps in student and teacher access to technology, equity issues, identification procedures, ensuring continuity of services, and providing teachers of the gifted with the necessary digital materials needed for online instruction. Recommendations for practice and future research will be discussed.

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Introduction

Gifted education programs vary widely across the United States. Because they are not mandated by the federal government, it is left up to each state to determine policies, procedures, and funding levels for services. In states with a mandate to identify and serve gifted and talented students, these programs are typically overseen by a coordinator in the

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central office. The duties of the district-level program coordinator are not always clearly defined and depend on several factors including the district's budget, size, geographic type (e.g., rural, urban, suburban), number of identified gifted and talented students, and certification requirements. In small or rural districts, for example, this person may have multiple duties and departments under their charge. Regardless of their job description, the district gifted education coordinator (DGEC) plays a key role as an advocate for students with gifts and talents (Peters & Brulles, 2017). They promote awareness of the academic and psychosocial needs of this population of students both internally (e.g., within the district, between schools, to the School Board) and externally (e.g., community groups, parent advocacy groups, business partners, and donors). To accomplish this task, the DGEC must effectively communicate and collaborate with school principals, caregivers, and other content supervisors.

While the typical challenges faced by DGECs in a regular school year vary and fluctuate, the COVID-19 pandemic presented additional complications for these leaders. For both special education and gifted education programs, decisions had to be made regarding how to adapt testing, student accommodations, and specialized instruction during remote learning while maintaining compliance with policies and mandates (Guilbault et al., 2022; Wolfgang & Snyderman, 2021; Yazçayır et al., 2022). The U.S. Department of Education released the following statement regarding the continuity of special education on March 21, 2020:

> Although federal law requires distance instruction to be accessible to students with disabilities, it does not mandate specific methodologies. Where technology itself imposes a barrier to access or where educational materials simply are not available in an accessible format, educators may still meet their legal obligations by providing children with disabilities equally effective alternate access to the curriculum or services provided to other students. (p.2)

Continuity of services was expected and required flexibility and adaptation. It is evident that central office supervisors of specialized programs faced new challenges during this unique time. Little is known about how the pandemic impacted the roles and responsibilities of DGECs; however, lessons can be learned from research findings applied to school principals, special education administrators, and other curriculum supervisors during the COVID-19 pandemic.

Roles and Responsibilities of District Central Office Administrators

Central office leaders are in a "unique position as middle managers who interact daily with both teachers and central office administrators" (Stosich, 2020, p. 4). They serve as instructional leaders, coaches, curriculum supervisors, budget managers, and professional developers. Studies of district central office leaders reveal common responsibilities: (a) supporting principals (Honig, 2012; Rorrer et al., 2008; Stosich, 2020), (b) monitoring student achievement and equity (Ezzani et al., 2021; Rorrer et al., 2008), (c) providing professional development (Rorrer et al., 2008; Guilbault et al., 2022), (d) policy guidance (Ezzani et al., 2021; Honig, 2003, 2008; Guilbault et al., 2022), and (e) instructional leadership for school improvement (Augustine et al., 2009; Honig, 2012; Mania-Singer, 2017; Rorrer et al., 2008). However, additional research is needed to elucidate how these duties impact school improvement (Hooge et al., 2019). Previous literature generally frames the central office leader's responsibilities within a *system* rather than examining their effectiveness, preparation, or responsibilities as individuals (Mania-Singer, 2017).

Whitworth (2014) conducted a case study of three district science coordinators to explore their role in "supporting teacher change and student learning" (p. 3). Findings suggested that the structure of the district and the supervisor's background experience impacted their effectiveness. The author found that those working in smaller districts also experience more barriers such as time and lack of sufficient resources to support science teachers. Whitworth (2014) delineated several key responsibilities of the district science supervisor: (a) aligning curriculum to science standards, (b) disseminating information, (c) working with principals and other administrators, (d) developing curriculum, (e) evaluating science teachers, (f) monitoring a budget, (g) organizing professional development, and (h) fostering community relationships.

Whitworth et al. (2017) further investigated the roles of district science coordinators as part of the Lilead Project with a sample of 122 participants across the United States. They examined professional responsibilities, professional development experiences, barriers encountered at work, and the relationship between their roles, responsibilities, district context (i.e., size, type), and background. A majority of participants were female and White and had served for fewer

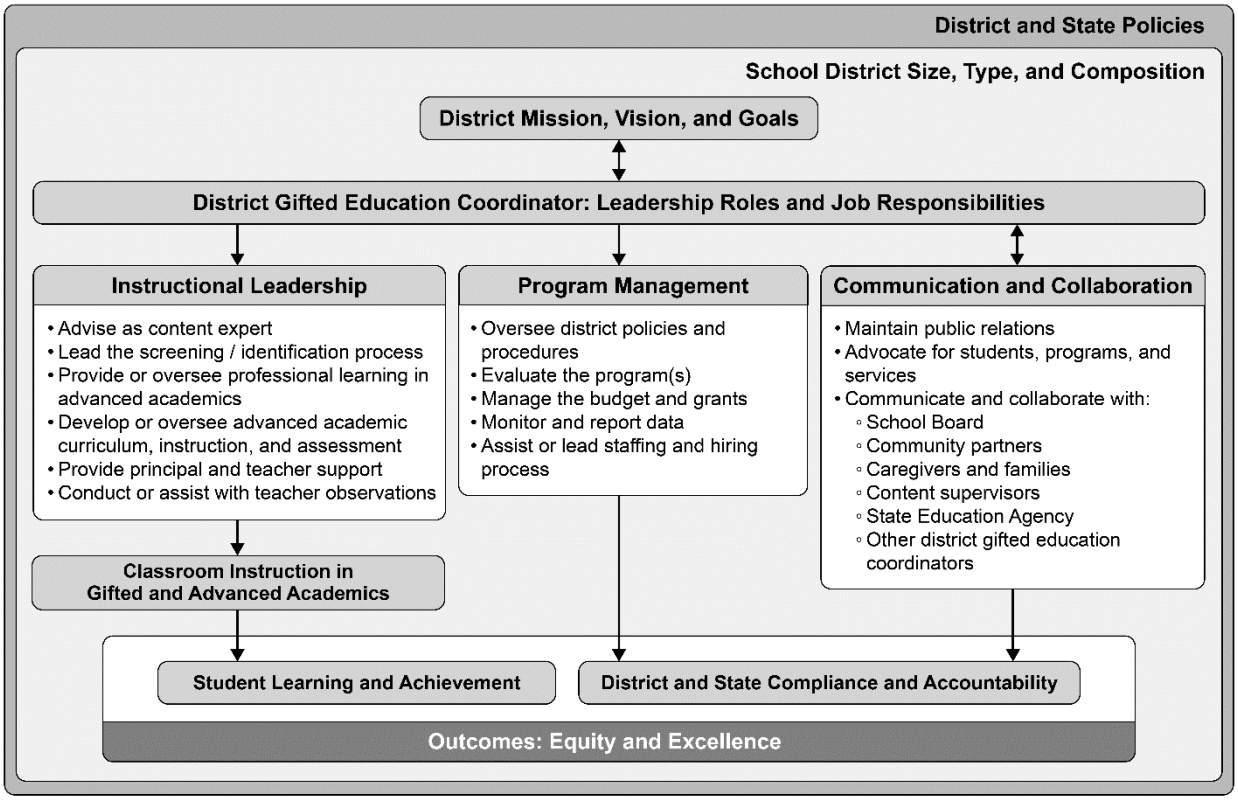
than 10 years in their role. Coordinators in this study held a degree in a science content area and most had been science teachers before being promoted to their current position. Those who were not certified in science came from mostly rural or smaller districts and supervised multiple content areas. Barriers experienced by these district science coordinators included lack of time, insufficient professional learning opportunities, lack of authority to enforce policies, and perception of a lack of emphasis on science instruction in their districts (Whitworth, 2017).

In a similar study of district library supervisors, Weeks et al. (2016) administered a national survey to examine the duties, background, and challenges they face. More than half (52.4%) of participants were school librarians immediately prior to their promotion to the supervisor position, 58.4% had experience as a former school librarian, and 60.8% held a Master of Library Science degree or equivalent. Challenges faced by district library supervisors included decreased funding leading to fewer resources and staff, shifts in technology policies that created barriers to access, and changes to content standards or curriculum. Overall, the authors found the district library supervisors to be highly educated and experienced, and they faced challenges that required the adoption of new skills. The authors emphasized the role of this leader as an advocate for the district school library program.

Finally, research has examined the leadership styles, recruitment, and preparation of district school psychologist supervisors and special education administrators (Milligan et al., 2014; Veale, 2010; Weaver et al., 2003; Young et al., 2021). Weaver et al. (2003) compiled a list of effective leadership behaviors among special education supervisors based on previous studies. Effective leaders use an effective system of communication and feedback, collaborate with staff with an attitude of inclusion, and demonstrate problem-solving skills (Weaver et al., 2003). Young et al. (2021) examined the supervisor's role in the recruitment and retention of school psychologists—a critical shortage area—and the impact that burnout has on school psychologist staffing shortages. The authors define two types of supervision: administrative and clinical. According to Young et al. (2021), "Clinical supervision focuses on supervising the direct services of school psychologists, and administrative supervision focuses on the legal, contractual, and organizational aspects within a school district; however, some areas of clinical and administrative supervision may occasionally overlap" (p. 1502).

Roles and Responsibilities of the District Gifted Education Coordinator

The leadership of a school district's gifted education and advanced academic program is typically overseen by a DGEC. In small or rural school districts, this individual may have other duties and content areas under their guidance, and in larger districts, there may be more than one person working in this capacity in the central office. Despite the critical role DGECs play in the supervision of advanced academic services, relatively little research has been conducted to investigate these leaders and their roles. Their job descriptions vary from district to district and from state to state; however, there are some common responsibilities outlined in the literature. These duties include supporting the district's teachers of the gifted, overseeing the district gifted identification process, facilitating professional learning for educators and administrators in their districts related to advanced learning, and program evaluation and monitoring tasks to ensure the programs are sustainable (Brulles, 2020; Guilbault et al., 2022; Novak & Lewis, 2023). In a recent qualitative study exploring the roles and responsibilities of gifted education coordinators before and during the pandemic (Guilbault et al., 2022), the authors identified three main categories of responsibilities inherent to the role: (1) instructional leadership, (2) program management, and (3) communication and collaboration (see Figure 1.)



Note. This figure depicts a model of a district gifted education coordinator's leadership roles, responsibilities, and targeted outcomes. CC- By attribution 4.0 International. Guilbault, K. M. (2022, February 15). *Leadership Roles of a District Gifted Education Coordinator*. Retrieved from https://osf.io/kyb3w/. https://doi.org/10.17605/OSF.IO/UK5TG

Figure 1. Conceptual model of the leadership roles of a district-gifted education coordinator

In a recent qualitative study, Guilbault et al. (2022) found inconsistency in job titles even within individual states, which may add to confusion surrounding responsibilities. Compared to their work pre-pandemic, the DGECs reported a level of intensity and rapid change accompanied by uncertainty related to the work environment, decision-making, policies, and communication (Guilbault et al., 2022). Similar to studies by Ezzani et al. (2021) and Floyd (2022; 2023), DGECs were concerned with matters of equity. The focus of their work during the pandemic centered on ensuring student access to technology, continuation of gifted education services, gifted student identification, and addressing political and social justice issues that were magnified during this time.

A national focus on improving equity and eliminating barriers to advanced learning programs in the United States has led to a shift in focus for DGECs' work and requires critical examination of policies and practices. This focus is reflected in updated gifted education standards and position statements from organizations like the National Association for Gifted Children (NAGC) and carries through into research in gifted education journals. Consequently, recent research on DGECs has examined organizational barriers to improving equity in gifted education programs and identification practices (Ezzani et al., 2021; Floyd, 2023; Floyd, 2022; Novak & Lewis, 2023). For example, Floyd (2022) conducted a case study of three DGECs in one state and found that these central office leaders need professional learning opportunities to prepare them for critical conversations related to systemic racism and how to directly address factors that contribute to underrepresentation in advanced academic programs for marginalized groups of students. Similarly, Ezzani et al. (2021) investigated how district efforts to provide professional learning in cultural proficiency affected policies and practices for gifted identification of culturally, linguistically, and economically diverse learners. Ezzani et al.'s (2021) findings emphasized the importance of communication, advocacy, and equitable conceptions of giftedness. DGECs may face barriers to attaining equity in their district gifted education programs because of teacher (and other external stakeholder) perceptions of giftedness (Novak & Lewis, 2023).

School and District Leadership During the COVID-19 Pandemic

School and district administrators were called on to solve a myriad of problems as they focused on the continuity of services, the effects of school closing on students' mental well-being, learning loss, gaps in access to technology, and the

health and safety of their faculty, staff, and students (Yazçayır et al., 2022). All of these issues had to be addressed during periods of constant change and uncertainty. While navigating these new challenges and pressures, leaders also experienced an "increase in bureaucratic load" that left many feeling overwhelmed (Yazçayır et al., 2022, p. 182). Research evidence about how leaders navigated these challenges is beginning to emerge.

Recent studies have reported distress, burnout, and coping mechanisms used by district and school leaders during the COVID-19 pandemic (Longmuir, 2023; Walls & Louis, 2023; Wolfgang & Snyderman, 2021). Walls and Louis (2023) examined sources of moral distress and levels of intensity among 26 school district leaders across 13 school districts in the United States during the first year of the pandemic and found three main sources of problems that led to moral distress: (1) political problems with the community or teacher's union, (2) dealing with problems among staff (e.g., stress, resistance to change, and collaboration), and (3) inability to meet student needs sufficiently (i.e., lack of resources, funding, policy, or family constraints). The authors noted that these burdens may be especially difficult in a caring profession like education.

Azukas (2022) explored the leadership competencies required for effectiveness during the COVID-19 pandemic through semi-structured interviews of principals and superintendents overseeing full-time virtual schools. Findings indicated differences in communication and engagement between leaders of brick-and-mortar schools and virtual schools, instructional support, supervision, and training and professional development. Longmuir (2023) suggested that these unusual circumstances forced leaders to rapidly make sense of changes and adjust how they led and consulted with others during decision-making processes; communication was critical during this time. Similar to prior research on leadership adaptations during times of crisis, studies exploring leadership during the COVID-19 pandemic employed change leadership, contextual leadership, crisis leadership, and caretaking leadership as frameworks for understanding (Huck & Zhang, 2021; Longmuir, 2023; Thornton, 2021; Yazçayır et al., 2022). A systematic literature review of 49 education-related COVID-19 studies (Huck & Zhang, 2021) investigated the challenges schools faced and provided recommendations for improving future remote and hybrid learning environments. Key findings focused on teacher preparation, equity, and communication. In examining leadership practices during the COVID-19 pandemic, multiple studies included themes related to caretaking leadership (Anderson et al., 2020; Kaul et al., 2022; Steilen & Stone-Johnson, 2023; Weiner et al., 2021). According to Steilen and Stone-Johnson (2023), leadership involved "model(ing) and provid(ing) care to support the growth of their organization, addressing the needs of teachers and students in order to create a positive environment and motivate learning" (p. 2). There were wide variations in the responses and adaptations to school closures and implementation of remote instruction.

Overall, previous research suggests traits and characteristics of effective leaders; however, leadership practices vary depending on factors such as district size and type, as well as other situational factors (Marzano, et al., 2005; Whitworth et al., 2017). Results of previous investigations suggest DGECs play an important role in assisting principals, teachers of the gifted, and other content supervisors in supporting instruction, ensuring compliance, and monitoring**.** All these practices ultimately serve the purpose of ensuring student achievement. These studies also reveal a gap in our understanding of the DGEC's role and how they adapted to challenges faced during the COVID-19 pandemic. Understanding this may elucidate ways to prepare future DGECs for success.

The Present Study

The purpose of this study was to explore and quantify the experiences of district gifted education coordinators (DGECs) during the COVID-19 pandemic. Although initial school closings took place in the United States and across the world in March 2020, consequences of changes to gifted identification practices, educational services, and leadership have had a lasting effect to this day in regard to student achievement (Peters et al., 2023), teacher shortages (Pressley, 2021; Westphal et al., 2022), and health of faculty and students (Correa & First, 2021). It is important to understand the challenges faced by DGECs during this unique time in order to address current DGEC, teacher, and student needs. We therefore investigated the roles, challenges, opportunities, and strategies implemented by central office leaders who oversee K-12 advanced learning programs.

Problem of Study

Main problem: What are the roles and responsibilities of DGECs?

Sub-problem 1. What were some of the leadership challenges faced by DGECs during the first year of the COVID-19 pandemic related to continuity of services for gifted learners?

Sub-problem 2. How did the roles and responsibilities of DGECs change, if at all, during the COVID-19 pandemic?

Method

Research Model

The present study was part of a larger mixed-methods exploratory project that aimed to articulate the responsibilities, challenges, and creative solutions employed by DGECs in the United States during the first year of the pandemic (see Guilbault et al., 2022, for some of the qualitative findings from this larger project). Participants included a purposive sample of 35 DGECs across the United States. Both multiple-choice quantitative and open-ended qualitative survey data were initially collected. The data and findings presented in this paper were drawn from participants' quantitative survey responses, using a descriptive cross-sectional study design. This type of model provides a snapshot of the frequency and characteristics of participants' experiences at a particular point in time (Aggarwal & Ranganathan, 2019), which aligns with the initial goals of this larger exploratory project and utilizes the participants' quantitative responses to concretely define their experiences.

Participants and Sampling Procedure

A purposive sample of participants was recruited through a national list-serve of DGECs in the United States. We were interested in locating participants working in a central-office leadership role that had been in that position for at least two years in order to compare their roles and experiences before the COVID-19 pandemic and during the first year of the pandemic. Job descriptions, titles, and roles varied greatly from state to state and from district to district, therefore the invitation and survey consent clearly stated that we sought participants who were in an administration and supervision role in which they oversee advanced academics or gifted education services for all schools in a district. This study excluded anyone who held the title "gifted education coordinator" but held an instructional or teacher-leader role at one or more schools and spent some of their time instructing gifted students. Supervisors, directors, or coordinators who oversaw entire district programs were included in the study.

Prior to data collection, ethical research approval was obtained for this study from the Johns Hopkins University Institutional Review Board (IRB). An invitation with informed consent and a link to a Qualtrics survey with 35 items was distributed electronically to 102 members of a national network of DGECs in March 2021, one year after the initial school closings related to COVID-19. Participants were provided an option at the end of the survey to provide an email address to be entered into a raffle to receive a $50 gift card. This was to incentivize participants to complete the lengthy survey. To ensure confidentiality, no IP addresses or other personally identifiable information were collected, except from those who volunteered to enter their email address for the raffle. Email addresses were removed from the downloaded data file prior to analysis.

The Analytic Sample

Sixty-five people initially completed the survey; 10 were eliminated because they had not worked in their role prior to the pandemic. Of the remaining 55 participants, 20 were eliminated from the analysis because they were not in a district leadership or administrative role, but rather were in a school or classroom instructional position. This left 35 participants in the analytic sample. Their demographic information is shown in Table 1.

Table 1. Respondent demographic information (N = 28)

Measure	Items	%	*n*
Gender	Female	96.43	27
	Male	3.57	1
Age	25-34 years	3.57	1
	35-44 years	35.71	10
	45-54 years	25.00	7
	55-64 years	25.00	7
	65-74 years	3.57	1
Race	White	92.86	26
	Black	7.14	2
Highest Degree Earned	Bachelor's	3.57	1
	Master's	32.14	9
	Post-Master's Certificate	28.57	8
	Ed.S.	7.14	2
	Ph.D.	25.00	7
Gifted Certification	No Certification	25.00	7
	Working on Certification	3.57	1
	Has Certification	67.86	19
Years of Experience	0-3 years	25	7
	4-6 years	39.29	11
	7-10 years	17.86	5
	16-20 years	14.29	4

Note. Ed.S. stands for Education Specialist degree. Twenty-eight of the 35 participants responded to demographic questions.

Participants were asked to indicate the size and type of school district in which they worked. Of the 28 responses to this question, 46.43% of respondents (n = 13) were employed in a medium-sized school district, 28.57% (n = 8) worked in a large school district, and 25% (n = 7) worked in a small school district. These districts were described as primarily *suburban* (50%), followed by *rural* (32.14%), and last, *urban* (14.29%).

Data Collection Tools and Procedures

Survey

Overarching research questions were developed after a review of the literature and national standards in gifted education. These questions guided survey design of an instrument that aimed to explore the following topics: (1) the roles and responsibilities of district gifted education coordinators before and during the pandemic, (2) coordinators' background experience and training prior to their current leadership position, (3) stress resulting from the COVID-19 pandemic, (4) in what ways, if any, the COVID-19 pandemic impacted their work and budget, (5) challenges they faced during remote instruction and school lockdowns, and (6) looking forward, what lessons they learned from this experience that they would like to see remain as part of their work in the future.

Pilot Testing

A survey with 50 items that included demographic questions and multiple-choice items, short response items, select all that apply items, and yes/no items was piloted with five DGECs from various states. Based on feedback from these content experts, items were removed or rephrased, resulting in a final survey with 35 total questions.

Data Analysis

Quantitative data were primarily analyzed with descriptive statistics to summarize the roles of DGEC and the challenges they faced during the COVID-19 pandemic related to continuity of services for gifted learners. To examine how DGEC's roles changed during the pandemic (for Sub-problem 2), 2x3 cross-tabulation tables (where binary yes/no responses comprised the two rows and the descriptions of their roles at the three distinct time points: (1) before the COVID-19 pandemic, (2) spring 2020, and (3) spring 2021 comprised the three columns) were used and tested with Pearson's chi-square test of independence to determine how the variables related to each other (Agresti, 2018). Some other bivariate relationships of interest (e.g., budget changes by district size, stress level by years of experience) were also tested with Pearson's chi-square test of independence to determine which relationships were statistically significant.

Results

Overview

This section highlights results from the survey items as they relate to each research question. Data were examined to understand the duties and responsibilities of DGEC, how these responsibilities changed during the COVID-19 pandemic, if at all, and what challenges they experienced during the pandemic.

Roles and Responsibilities of DGECs

On the survey, participants could mark any role or duty for which they were responsible in their current position from 19 options. Descriptive statistics were calculated for each role and are presented in Table 2. Certain roles received the highest number of reports and greatest means across the three distinct time points: oversee the gifted identification process; develop or revise gifted or advanced program handbooks, policies, and/or procedures; and support school principals in their implementation of gifted/advanced education services. The high levels with which they were reported indicated that these roles and responsibilities may be considered key aspects of DGEC positions, regardless of DGECs' state, district size, or district urbanicity.

Table 2. Reported roles and responsibilities of DGECs across three time points

Role or Duty	Sum	Mean	SD
Oversee district gifted identification process	75	25	1
Develop or revise gifted program handbooks, policies, and/or procedures	70	23.33	0.58
Support school principals in their implementation of gifted/advanced education services	63	21	3
Curriculum supervision for advanced learning programs	59	19.67	0.58
Program evaluation	59	19.67	2.31
Assist principals with academic acceleration decisions	59	19.67	0.58
Oversee district gifted/advanced education budget	58	19.33	0.58
Supervise an appeals process	58	19.3	1.15
Test administration	58	19.33	4.04
Provide professional learning - virtual	56	18.67	6.66
Prepare, monitor, and/or submit reports or updates to the State Department	56	18.67	1.53
Facilitate or deliver parent information nights, open houses, or workshops	54	18	5.57
Maintain electronic file system with resources for teachers of the gifted	50	16.67	1.53
Observation of gifted education teachers	49	16.3	4.04
Attend and/or present at school board meetings	49	16.33	2.08
Facilitate parent or community advisory groups	41	13.67	2.08
Provide professional learning - in person	40	13.33	10.50
Supervise other content areas (e.g., magnet programs, STEM, etc.)	31	10.33	0.58
Attend school-based parent conferences	30	10	3.61

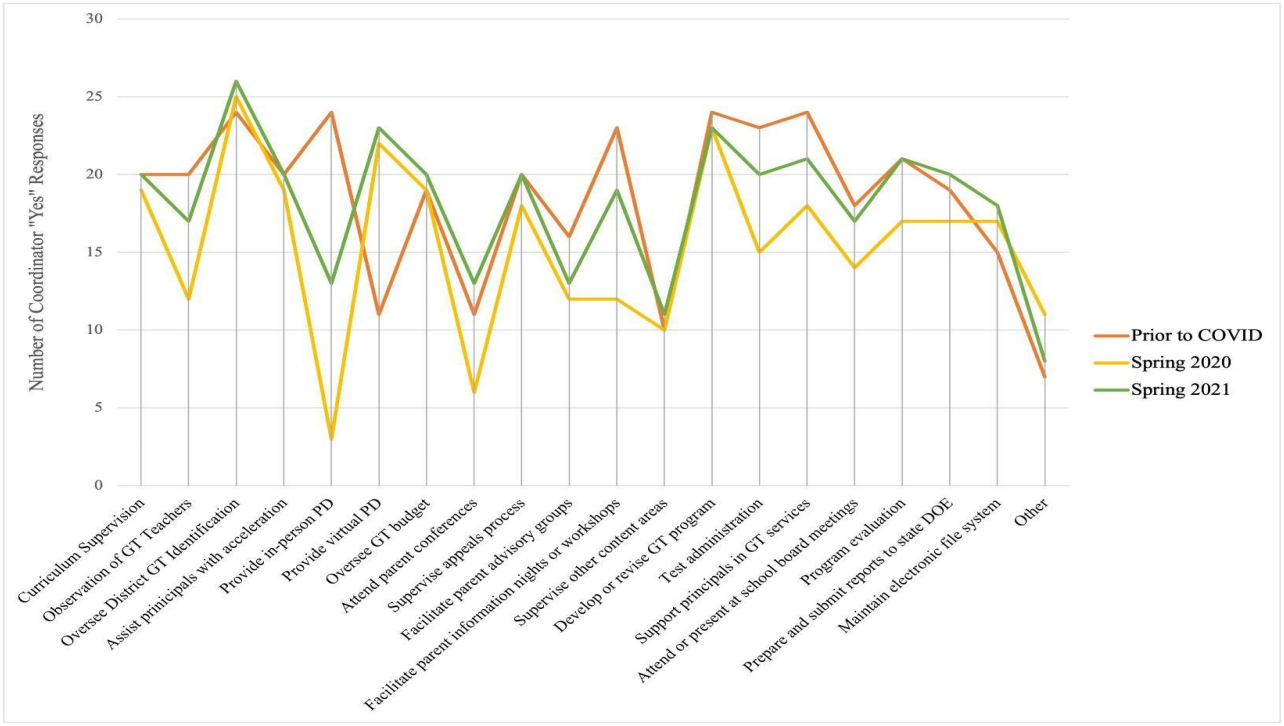
Note: Participants were asked to select all that apply.

Other roles and responsibilities were less frequently reported across the sample: attending school-based parent conferences, supervising other content areas (e.g., magnet programs, STEM), and facilitating parent or community advisory groups. The lower frequencies and means of these reports suggest that these duties are less imperative to the role of DGEC; however, some DGECs may fulfill these responsibilities either due to district or state policy differences, budget differences, or their own volitions.

Changes to DGEC Roles and Responsibilities during the COVID-19 Pandemic

Certain roles and responsibilities were most negatively impacted by the COVID-19 pandemic. Providing in-person professional learning (PL), attending parent conferences, observing teachers of the gifted, providing parent informational nights, administering tests, and attending school board meetings all took dips during the initial COVID-19-related school closings (i.e., the spring 2020 semester), as shown in Figure 2. These changes make sense since all roles typically required in-person attendance or a certain level of technological capacity for which districts were not yet prepared in the first months of the pandemic. It appeared that some other roles actually increased in importance one year after the pandemic hit (i.e., the spring 2021 semester). The provision of virtual PL, the overseeing of district

identification processes, and the reporting of activity to the state department of education were more frequently reported in March 2021 than they were prior to the pandemic. Certain roles remained the most consistent over time, as evidenced by their low standard deviation (*SD* = 0.58) presented in Table 2: curriculum supervision for advanced learning programs, assisting principals with academic acceleration decisions, overseeing the district gifted/advanced budget, supervising other areas, and developing or revising gifted program handbooks, policies, and procedures.



Note. This figure depicts the number of responses indicated by DGECs for each survey item across the three time points. It shows which roles remained relatively stable and which ones varied across the three time points. PD = professional development. GT = gifted and talented. DOE = Department of Education.

Figure 2. Changes to DGEC positions before, during, and after COVID-19 school closings

A 2x3 cross-tabulation table with subsequent Pearson's chi-square tests of independence revealed some statistically significant changes in DGECs' roles during the pandemic: a decrease in the provision of in-person PL ($p < .001$), an increase in virtual PL ($p = .001$), a decrease in parent informational nights, open houses, or workshops ($p = .004$), and a decrease in test administration ($p = .037$). The decreases in observation of teachers of the gifted ($p = .068$) and in supporting principals with their provision of gifted and advanced services ($p = .108$) were marginally significant.

Changes and Challenges Experienced by DGEC during the COVID-19 Pandemic

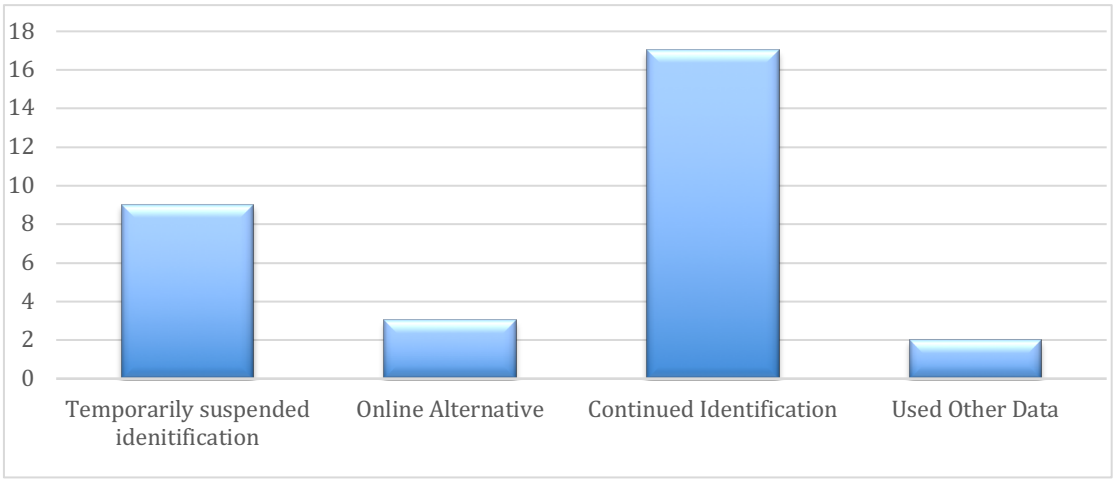
It appeared that DGECs endured some different challenges throughout the course of the pandemic, likely due to their varying district and state policies and access to needed funding or other provisions. At the time of data collection in March 2021, most respondents ($n = 17$) had returned to work fully in-person, with a few remaining in hybrid ($n = 3$), fully remote ($n = 2$), or other ($n = 4$) settings. Changes in their work settings may have affected the efficacy with which they could handle their positions and responsibilities.

Budget Changes

Forty-three percent of respondents ($n = 15$) reported that their gifted and advanced programming budget stayed the same throughout the first year of the pandemic, while 17% ($n = 6$) reported a decrease and 11% ($n = 4$) reported an increase. Interestingly, both rural ($p = .05$) and small ($p = .022$) districts had statistically significant relationships with reports of no budget change, via Pearson's chi-square tests of independence, meaning that DGECs operating within those district types were likely less impacted by changes and stresses associated with budget. Of the six DGECs with a reduced budget, only one continued normal identifying procedures in accordance with the Centers for Disease Control and Prevention (CDC) guidelines.

Changes to Student Services and Identification

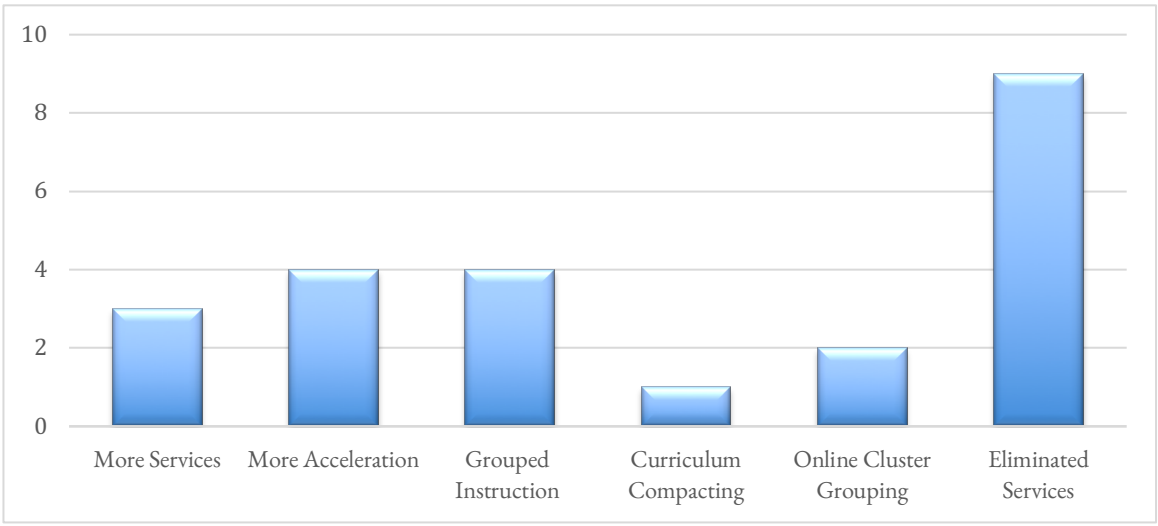
Participants could select all options that applied to their experience in how identification and services changed. Their reports for changes in identification are shown in Figure 3, and their reports for changes in services are shown in Figure 4. It appeared that the majority of participants (n = 17) were able to continue identification methods following the CDC safety guidelines, but several others (n = 9) had to temporarily suspend identification when the pandemic originally hit.



Note. This figure conveys the extent to which DGECs reported how their districts' identification procedures changed during the spring 2020 semester.

Figure 3. Gifted identification procedure changes during COVID-19 pandemic (n = 35)

The elimination of services was the greatest change in gifted and advanced services during the pandemic, with 26% of respondents (n = 9) reporting this issue. Overall, it appeared that most services for students did not change substantively during the first year of the pandemic, with all other options reported by only a few DGECs.



Note. This figure conveys the extent to which DGECs reported how their districts' services changed during the spring 2020 semester.

Figure 4. District service changes during remote instruction (n = 30)

Supporting Teachers of the Gifted Through Challenges

Knowing that teacher supervision, observation, and providing support are relatively common responsibilities of DGECs in the United States, as presented above, it makes sense that one challenge for DGECs was adapting how they supported gifted resource teachers throughout the pandemic and responsively attended to the teachers' needs. The sample selected all the needs they observed among their districts' gifted resource teachers over the first year of the pandemic, as shown in Table 3.

Table 3. Needs of gifted resource teachers during the COVID-19 pandemic

Needs of Gifted Resource Teachers	%	*n*
Technology tools (software, hardware, Wi-Fi, cameras, headsets, etc.)	57.14	20
New materials for working with advanced learners (books, e-books, apps, online learning subscriptions, etc.)	54.29	19
Technology training	48.57	17
Support for working with advanced learners	45.71	16
Additional planning time	42.86	15
Autonomy to be creative and flexible	40.00	14
More frequent meetings with other teachers of the gifted	34.29	12
Co-planning	22.86	8
Reduced testing of students	20.00	7
Other (please list)	20.00	7
Fewer extra duties	17.14	6
Fewer meetings	17.14	6
Smaller class sizes	14.29	5
Briefer meetings	14.29	5
Fewer observations or evaluations	8.57	3
Total		160

Note: Participants were asked to select all that apply.

Equity Challenges

DGECs reported several concerns they held regarding how the COVID-19 pandemic impacted the equity of their gifted and advanced programming and services, as shown in Table 4. The most widespread equity concerns across this sample were teachers' varying comfort levels with providing virtual instruction (n = 21), disparate access to adult supervision at home during virtual learning (n = 20), and unequal access to needed technology (n = 17).

Table 4. Challenges related to equity

Responses	%	*n*
Comfort level with online learning and educational tech tools used for instruction	16.15	21
Adult supervision/support for online learning at home	15.38	20
Unequal access to technology (Wi-Fi, laptops, bandwidth, cameras, etc.)	13.08	17
Changes to (or elimination of) identification practices	10.00	13
Lack of culturally proficient teaching practices in virtual learning	10.00	13
Resources and materials lack diversity	10.00	13
Special education needs (i.e., IEP plans or 504 plans could not be fully met, technology tools lacked ADA compliance, lessons not created with Universal Design for Learning practices, etc.)	10.00	13
Language barriers	7.69	10
Other, please explain	5.38	7
Access to school meals	2.31	3
Total	100%	130

Note: Participants were asked to select all that apply.

Stress and Job Satisfaction

Forty percent of the respondents reported feeling more stressed in their position, compared to the prior, pre-pandemic year. Eleven percent actually reported being less stressed during the first year of the pandemic, while the remaining respondents felt the same levels of stress as before. Interestingly, no participants who had served as a DGEC for four to six years reported less stress; they had a negative marginally significant relationship with less stress, per Pearson's chi-square test of independence test (p = .063). All of the DGECs whose districts reduced services reported either greater levels of stress or no change in stress. Likewise, 34% of the sample (n = 12) considered leaving their positions or retiring early after the first year of the pandemic, and 26% (n = 9) said they considered it.

Discussion

This study sought to define the most common roles and responsibilities of DGECs, capture how those roles and responsibilities changed during the COVID-19 pandemic, and articulate some of the most prevalent challenges they faced in the first year of the pandemic related to continuity of gifted and advanced education services. Prior to this study, only a few studies (Ezzani et al., 2021; Floyd, 2022 & 2023; Guilbault et al., 2022) examined the unique roles of DGECs. Since state gifted education policies and funding vary quite a bit (Rinn et al., 2022), there was a gap in knowledge about which duties most comprise DGEC positions in the United States, regardless of location or district context.

The findings in this descriptive study suggest that most DGECs oversee their districts' gifted identification process; develop or revise their district's gifted handbook, policies, and procedures; and support site principals in the implementation of gifted and advanced services. Thus, these responsibilities are central to the position of DGECs in this sample, regardless of location or district context. Our findings suggest that the responsibilities of supporting principals (Honig, 2012; Rorrer et al., 2008; Stosich, 2020; Whitworth, 2014) and making policy decisions (Ezzani et al., 2021; Honig, 2003) are similar to expectations held of other central office leaders (e.g., special education administrators, district science coordinators, district library supervisors), whereas the duty of overseeing the gifted identification process is unique to DGECs. Like the administrative supervisors of school psychologists interviewed by Young et al. (2021), DGECs also take on both clinical and administrative supervision responsibilities in how they oversee psychological, achievement, and/or cognitive assessments for identification processes, tend to principals' and teachers' needs, and facilitate several legal and organizational aspects related to gifted and advanced education services.

These findings add to and support the small body of literature that describes what the position of a DGEC in the United States entails (Brulles, 2020; Ezzani et al., 2021; Guilbault et al., 2022). In considering how the primary DGEC responsibilities from this study align with Guilbault's (2022) Conceptual Framework of the Leadership Roles of a DGEC, two fall into instructional leadership, one falls into program management, and none comprise communication and collaboration directly, although most of these roles require effective communication and collaboration in order to be accomplished. Meanwhile, certain responsibilities like attending parent conferences, facilitating parent and community advisory groups, and supervising other programs seemed less common. Again, considering Guilbault's conceptual framework, two of those duties fall into the role of communication and collaboration, while one falls into the role of program management. These differences perhaps might be explained by state mandate or budgetary differences (e.g., a district with a lower budget may only allocate half of a salary toward the DGEC role and expect them to oversee teacher instructional coaching for the other half of their position). Put together, based on this sample, it seems that instructional leadership is the most dominant role taken on by DGECs, followed by program management, and then followed by communication and collaboration. This ordinal breakdown of roles implies that DGECs particularly share commonalities in their roles and responsibilities with the position of a district science coordinator, as described by Whitworth (2014) and Whitworth et al. (2017), whose primary duties also fall into both instructional leader and program manager role; thus, it may be of interest to see how those leaders can collaborate or learn from each other to grow in their distinct positions.

DGECs experienced some similar pandemic-related challenges with other district central office leaders, such as focusing on continuity of services, navigating inequitable access to needed technology, and supporting teachers transitioning to online environments (Huck & Zhang, 2021; Steilen & Stone-Johnson, 2023; Yazçayır et al., 2022). Although some DGEC responsibilities remained relatively stable throughout the first year of the COVID-19 pandemic (i.e., curriculum supervision, supporting principals with academic acceleration decisions, overseeing the budget, supervising other programs, and developing and revising the handbook, policies, and procedures), certain duties—particularly those typically relying on face-to-face interactions and communication, such as parent conferences, in-person teacher PL, parent informational nights, observing teachers, administering tests, and attending school board meetings—decreased in frequency across DGECs. This makes sense, considering that many districts took time to locate needed technology to better facilitate virtual meetings and interactions. This also aligns with other literature about district leaders' challenges emerging from the pandemic (Longmuir, 2023; Steilen & Stone-Johnson, 2023; Yazçayır et

al., 2022). However, it suggests a need to further examine how the lack of face-to-face interactions and communication with teachers and parents impacted the provision of services and students' individual learning experiences during the pandemic.

Certain challenges were felt across the sample, such as increased levels of stress when compared to the prior year and delays in district identification procedures. Equity, in particular, was a key concern of DGECs during the COVID-19 pandemic, as many identified that students had insufficient access to technology, adult supervision during virtual learning, and teachers with varying levels of comfort in facilitating virtual instruction. Given the long-standing equity issues present within the field of gifted education (Peters, 2022), this finding warrants concern, as it adds to the body of literature suggesting that historically marginalized students were more greatly impacted by the negative outcomes from the pandemic (Peters et al., 2023). It also provides further support from Floyd's (2022) and Ezzani et al.'s (2021) studies about how DGECs require more guided training in how to resolve equity issues in gifted and advanced education programs; perhaps if trained more cohesively, they can act as advocates for equity, as Weeks et al. (2016) recommended for district library supervisors.

The majority of the sample felt greater levels of stress in the pandemic year than the year prior, and they also reported considering leaving their positions or retiring early, again echoing patterns observed across other leadership roles (Longmuir, 2023; Walls & Louis, 2023; Wolfgang & Snyderman, 2021; Yazçayır et al., 2022). This also should prompt sustained empirical and practical attention; DGECs often hold a special skillset and pursue technical gifted education training (as observed in our sample, in which over 70% held or were working on gifted education certification). If DGECs experience burnout and opt to leave their current positions, it might create a shortage of qualified people to lead gifted and advanced programs, which may have negative trickle-down effects on teachers of the gifted and their students. Most of the current literature examines how COVID-19 impacted teachers' levels of stress and burn-out (Pressley, 2021; Westphal et al., 2022), but our findings suggest focused attention should also be granted to DGECs' stress and work satisfaction post-pandemic.

Conclusion

Put together, the findings from this study suggest that DGECs in the United States share some similar responsibilities with other central office leaders, such as supporting principals and developing policies and program handbooks, but there are specific responsibilities unique to their position, especially related to gifted identification procedures. In our sample, DGECs primarily took on instructional leadership roles, followed by program management roles, and they saw a decrease in their communication and collaboration roles in the spring of 2020 and spring of 2021 (i.e., after the COVID-19 pandemic). DGECs reported specific challenges those arose from the pandemic, such as inequitable student access to adult support and needed technology, increased DGEC levels of stress and considerations of leaving their positions, and a lack of needed instructional resources for teachers of the gifted. Based on these findings, we provide certain recommendations for practice and future research.

Recommendations

Recommendations for Practice

It is recommended that there be a focus on monitoring the stress levels and well-being of DGECs and subsequent efforts made to address burn-out resulting from their experiences at work over the past three years. Also, DGECs would benefit from resources and time to evaluate the impact of the COVID-19 pandemic on equity in student identification and provision of services, and the impact this may have had on student achievement. Finally, efforts should be made to strengthen communication gaps that may have developed between DGECs and outreach to families in their districts. This may be accomplished through use of technology tools that families and staff became comfortable with during the COVID-19 pandemic, as well as by safely reinstating in-person events to build community.

Recommendations for Future Research

Results from this study suggest a need to further examine the impact of alternative identification practices that were employed during the COVID-19 pandemic on the present student enrollment in gifted education programs. Future studies should investigate the impact of the modified identification processes, service disruption, and related equity issues. Additionally, research should explore how the lack of face-to-face interactions and communication with teachers and parents impacted the identification and provision of services and students' individual learning experiences during the COVID-19 pandemic.

It would be beneficial to conduct a study on the roles, responsibilities, background, and training of DGECs with a larger sample size to continue to add to the literature. This information would be valuable to graduate programs that prepare administrators and teachers of the gifted so they could adapt courses to meet the skills and competencies that are needed for success as a DGEC. Researchers could examine which factors predict differences in roles (i.e., Why do some DGECs oversee other content areas? Why are communication and collaboration less prevalent than instructional leadership and program management for some DGECs?) and explore current DGEC stress levels and whether that effect persists or has leveled off over time. Such research could include a focus on what DGECs need from their supervisors in a post-pandemic context to feel successful in their work. Furthermore, research is needed to determine how the challenges and barriers observed impact DGECs in effectively supporting teachers of the gifted.

Limitations

The objective of this study was to explore the roles, responsibilities, challenges, and solutions employed by district gifted education coordinators during the pandemic. There are several limitations to consider when interpreting and drawing conclusions from this study. First, one limitation is the low response rate. Approximately 30% of the total members of the national group invited to participate in the study qualified and completed the survey. Also, some participants chose to skip some survey items. Because of the low response rate and sample size, findings may not be generalizable to all DGECs, and it is possible that the sample in this study may have had more extreme reactions and feelings about the pandemic, hence their motivation to complete the survey. As an exploratory study, the information gained was useful for creating the semi-structured interview protocol and revised survey for the second phase of this study.

Second, another limitation is the homogeneity of sex and gender in this sample. Although there are more female educators than males in the United States (Institute of Education Sciences, 2020), it is unknown if that is also the case for central office supervisors of advanced academic programs. No data sets are available, as this information is not collected by any agency or organization. The lack of racial and ethnic diversity in this sample is also a limitation. In the second phase of the study, additional efforts were made to recruit more participants of Color.

A final limitation is the data collection time period. This was a snapshot of the experiences during the first year of the pandemic. At the point of data collection, many of the district coordinators had returned to work in person. It would have been useful to collect data across multiple points in time, from the initial school closings, mid-way through year one, one year later, and again in the following year.

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We would like to thank all of the DGECs who participated in the study. Their voices are critical to better understanding how leaders pivoted during this crisis and learned from their experiences so we can better prepare districts for the future. In addition, we confirm that the manuscript describes an original work. No part of the manuscript has been published before, and no part is under consideration for publication in another journal. We received no financial support for this work, and there are no conflicts of interest to disclose. Research approval was granted by our university's Institutional Review Board (IRB), and we adhered to ethical standards: (1) engaging in research best practices, (2) ensuring that there was no harm to participants, (3) maintaining informed consent, and (4) ensure privacy and confidentiality. This research was presented at 4th International Congress on Gifted Youth and Sustainability of Education (ICGYSE), 11-12th Nowember 2023, Antalya (onlibe), Türkiye.

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Research Article

Enhancing of college students' creativity with english digital multimodal composition

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Abstract

This paper studies students' creativity style in digital multimodal composition activities as a part of 4C skills in 21st century called creativity, critical thinking, communication, and collaborative. Paragraph Writing class students' were chosen as the object of the study. This class is considered as the most suitable object since they learn about type of essays to be written and published digitally. This study applied pre and post observation in descriptive manner using genre-based approach to know the comprehensive variable of creativity in digital multimodal composition. A questionnaire is given to the students in Google form to see their responses. It is found out that the students' creativity is much more developed in doing digital multimodal composition compared to single mode text in essay writing since they tried to combine multi modes. They were more enthusiast and proactive in communicating their ideas and sharpen their critical thinking in the form of shifting written text to audio visual. They boost their creativity much more in collaborative framework as well. Thus, creativity as one of 4C skills criteria is one of dominant skills needed in creating digital multimodal composition.

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Introduction

The Industrial Revolution (iR 4.0) causes technological disruption in various fields of life, including education. Educators must act quickly in adapting teaching and learning methods that integrate device resources in class. Ally and Wrak (2020) mention that this integration makes learning to be customized for sustainable development in education. Later, one of the customize setting is dealing with digital teaching materials through learning innovations in order to improve the quality and quantity of learning. This current educational setting must also characterize creativity, communication, collaboration, and critical thinking (4Cs) skills.

Furthermore, digital literacy skill, which is also inseparable from the 4Cs as 21st century skills in education, must be possessed by the students as an effort to prepare for the era of technological disruption. They must prepare themselves by highlighting the uniqueness and added value of digital literacy skills in learning English . Alfia, Sumardi, and Kristina (2020) emphasized that it is a need to integrate English skills and digital literacy skills for digital natives. They found out that photo-visual literacy, information literacy, reproduction literacy, and real-time thinking literacy were the frequently used. Furthermore, it is also strongly emphasized the importance of the C6 bloom taxonomy in which the students are required to 'create' in a lesson. Thus, the verb 'to create' is closely related to active skills in English such as writing.

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Learning English, especially an active skill like Writing requires the students to create and produce a written text. It is believed that if the course added with project-based activities with digital tools, the output will be highly recommended. It is hoped that this activity can improve the students' language skills in an integrated manner with other skills such as speaking, reading, and listening as well as other language components such as grammar and vocabulary. In some cases, this activity also supports a translanguaging whereby the students explore different sources such as written and spoken language, image, and sound effects in different semiotic resources (Ho; 2021, 2022). Then, writing activity can be shifted into digital form by integrating some multimodalities to form digital multimodal composition. This innovation was chosen rationally that the students should no longer create paper-based writing that can only be read by themselves, lecturers, and classmates. However, they can disseminate their writings in digital form, whether it is composed with audio, visual, or audio-visual so that they can be read by everyone around the world via the internet. Digital multimodal practises organize its knowledge and skills into the critical, creative, and technical domain (Liang, Wei, and Lim; 2021). It is very beneficial framework for language learners (Tour, Ekaterina & Melissa Barnes; 2022).

Creativity is one of unexcluded product manners in doing digital multimodal composition. Johnson (2015) mentions that creative thinking skills by understanding creativity process can be used to improve creativity itself as a part of problem solving. At the same term, Birgili (2015) also notes that these two abilities are interchangeable. He adds that one of the helpful tools for development of creativity and critical thinking is problem-based learning environment. In addition, creative thinking skill will also be developed by setting project-based learning (Wijayati and Sumarni, 2018). These two learning based are fit to digital multimodal composition. According Skains (2017) digital multimodal composition does not only impact individual creative writers, but also for students and teachers. Lim and Toh (2019) conducted a research on YouTube production by children in formal education and found out that digital multimodal composing practices demonstrate creativity, critical thinking, and semiotic awareness. Selfa, Pifarré, Cujba, Cutillas, and Falguera (2022) refer terms co-creativity and co-creation for the advantages of digital multimodal composing activities. Multiliteracies in multimodal writing activities create creative construction of meaning (Howell, Reinking, and Kaminski; 2015). Vicky (2016) highlighted the processual character of creativity and aesthetics aspects of digital creation based on the space, time, object, beings, and actions elements. They concluded that digital multimodal composition is the best way to be applied. To sum up. The activity of creating a text in the multiple modes digitally or best known as digital multimodal composition has many advantages for the students, as one if them is developing their creativity.

Problem of Study

Main problem and sub-problem statements.

- This main problem in this study is focused on finding out the students' creativity in English digital multimodal composition activities as a part of 4C skills in 21st century called creativity, critical thinking, communication, and collaboration.

The sub-problem is then formulated using the following question:

- How the students' self-conscious in developing their creativity in producing English digital multimodal composition?

Method

Research Model

This research applied descriptive quantitative research model that proposed syntactical learning model in creating English digital multimodal composition by proposing genre-based approach. Pre and post observation in the term of learning stages were also taken into account as additional notes. The last, the students were given a questionnaire in the Google form that consisted of 15 question to see their responses in applying digital multimodal composition for learning paragraph writing.

Participants

A sample of this study was taken from 3 classes of Paragraph Writing class with total 69 students who were in the 3rd semester. In the final meeting, they were asked to create English digital multimodal text. This was considered as project-based learning.

Data Collection Tools

The data were collected by administering online questionnaire using Google form to determine the students self-consciousness in developing their creativity after they created artefact in English digital multimodal composition with 15 questions. The questionnaire was validated first by using expert judgement in this matter were the Paragraph Writing lecturer. The item of questionnaire was taken from The Creativity Style Questionnaire-Revised by Kumar (1997) that was scaled using Likert Scale from 1-4 (strongly disagree – strongly agree). There are 8 scales measured; creativity capacity, belief in unconsciousness processes, use of techniques, use of other people, final product orientation, behavioural self-regulation, superstition, and uses of senses.

Procedure

Before starting the study, some ethical research issues were fixed such as informed consent, anonymity, and confidentiality from the participants. All students were willing to participate in the study without any pressure. This study used pre and post observation in descriptive manner using genre-based approach to know the comprehensive variable of creativity in digital multimodal composition. A product based of YouTube video has been assigned to assess students creativity in delivering meaningful multimodal message for composing review text and verbalized it into audio-visual mode. They were asked to follow creating procedure of review text in the classroom using Genre-Based Approach in some Teaching Learning Cycles. These cycles included (1) Building Knowledge of the Field (BKOF), (2) Modelling of the Text (MOT), (3) Joint Construction of the Text (JCOT), dan (4) Independent Construction of the Text (ICOT). After that, an online Google form questionnaire was administered to deal with the students' creativity in the activities.

Results

The first thing to do was to ask students to write the type of writing or genre they were studying based on the existing syllabus. They could choose the type of genre they like the most. They were given a freedom to explore their creativity based on their personal preferences. However, the focus of this activity was the text that was studied in the last 4 meetings; Text Review.

The steps of this learning innovation were designed following a series of steps or activities that have been carried out, including:

Building Knowledge of the Field (BKOF)

Giving a pre-test in writing review texts independently to see students' prior knowledge in applying review texts based on daily contexts. The topics given to students are reviewing food, drink, tourism place, cosmetics product, smartphone application, book, and movie. The students are free to choose what theme they will develop for their text writing.

Picture 1. Students' activity in building prior knowledge

Modelling Text

After that, the review text material that has been prepared by the lecturer is given to discuss the generic structure and language features in the review text. They discuss the structure of the review paragraph and what language components should be in the review text. In addition, raw text is also given and must be discussed together. The students are asked to identify and analyze paragraph structure and language content in the text.

Picture 2. Students' activity in modelling text

Collaborative Writing

After the collaborative discussion is carried out, it is hoped that students will be able to analyze the initial errors in writing the review text in the first step. They were asked to return to collaborative writing or writing together about the topics that had been provided earlier. They can choose one of them.

Picture 3. Students' activity in collaborative writing

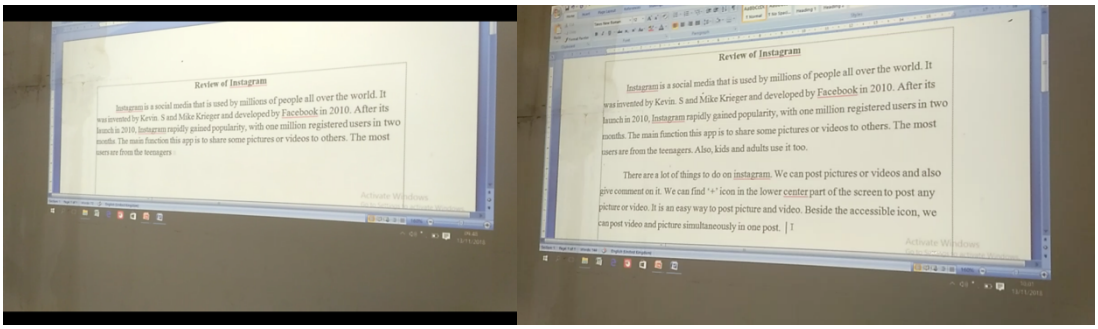
Editing

The students edit their writing independently and in groups. This is done to provide input on their writing results in order to be better in terms of grammar, vocabulary, punctuation, even coherence and cohesion.

Picture 4. Students activity in editing phase

Revising

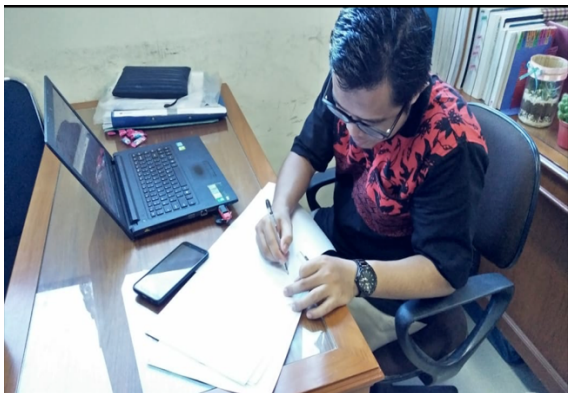
From the results of editing, their texts were revised together (peer revising) both by classmates and input from the lecturers.



Picture 5. Revising the text collaboratively

Independent Writing

After students are able to analyze the components in the review text, the next step is to write independently. This is done after students are considered to have been able to understand the concept and apply their writing.



Picture 6. Feedback from lecturer

Verbalize Digital Content Writing

The final stage of this series of learning innovations is to digitize their writings in the form of videos and upload them to their respective YouTube accounts.

Picture 7. Students' activity in verbalizing their writing

Picture 8. Students upload their artefact in YouTube

In simple terms, this study follows the genre-based approach theory which is widely adopted for learning writing. However, the researchers added a digital literacy component as a demand for 21st century learning. This component was later named verbalize digital content writing. The development of this learning innovation is the improvement of students' writing skills in various genres in the form of digital content that combines audio, visual, and audio-visual (multimodal) multimedia. In addition, this digital content writing learning innovation has succeeded to make learning more interesting for students in meeting the learning objectives in the Paragraph Writing course and improve the students' creativity.

The measurement of student understanding regarding the introduction of multimodal digital learning in the Paragraph Writing course was done by using questionnaire. This point is clarifying students interest in implementing multimodal digital learning. The results of these two categories of questionnaires will be used as the basis for the continued use of multimodal digital learning in this course. The results of all the questionnaires that have been distributed are as follows:

Table 1. Item analysis of the students' self-consciousness process in developing creativity

No	Scale	Statement	Σ	Category
1	Creativity capacity	I consider myself to be a creative person in doing digital multimodal composition.	3.1	Very High
2		I am engage in creativity type works in doing digital multimodal composition.	3	High
3	Belief in unconscious process	Creative ideas in doing digital multimodal composition simply occur to me without even thinking about them	2.9	High
4		I feel that new ideas in doing digital multimodal composition possess me and guided me through to completion almost automatically	3.2	Very High
5	Use of strategies	I typically create new ideas when I do digital multimodal composition by systematically modifying and combining an existing idea	2.9	High
6		When I get stuck in doing digital multimodal composition, I tend to leave the idea for a while, do something else, before returning to work on it	2.9	High
7	Use of other people	When I get stuck, I consult or talk with peers and lecturer about how to proceed my digital multimodal composition.	2.9	High
8		I physically isolate myself from peers and lecturer when I am working on my digital multimodal composition to come up with new ideas	2.8	High
9	Final product orientation	If I do not have a concrete creative product for my digital multimodal composition, I think I have failed	2.8	High
10		I work most creatively when I have deadline in doing my digital multimodal composition	2.9	High

11	Behavioural Self-Regulation	I have set aside a particular place and time for creative works in doing my digital multimodal composition	2.9	High
12		I reward myself in some way after I have worked on my creative ideas for a designated period of time	2.9	High
13	Superstition	I have a favourite tool without which I would find it hard to concentrate when I am engaged in creative work of my digital multimodal composition	3	High
14	Use of Senses	I tend to use my visual sense a lot in doing my digital multimodal composition	3	High
15		I tend to use my audio sense a lot in doing my digital multimodal composition	2.8	High

Note: *N = 69*

The table above shows that each statement asked to the students gets a high response from students. There are two categories which are very high and high since the score reach 2 point above. This of course illustrates directly that multimodal digital learning in writing courses is very much needed and welcomed by students. This is certainly related to the tendency of today's students who prefer things that are multimodal that are digitized.

Discussion and Conclusion

This study was focusing on the phases of creating English digital multimodal composition that was in specific circumstances develop the students' creativity style. The study showed that implementing the genre-based approach as process combined with verbalized visualization of written text as product oriented lead the students to consciousness creativity process. They paid attention and considered themselves to be creative in producing and creating all components of modes in digital multimodal composition. It indicated that creativity all in one package is needed in exploring the students' ideas for writing digital multi modes pattern. The finding could be meant that creativity in digital multimodal composition is always interconnected to the product oriented goals since they are trying to create a digital artefact of their writing. The recent study's finding confirms Hafner (2015, 2020) that digital multimodal composition is not only about copy, edit, and share digital content, yet it is about the process of creative works. further, he mentioned about authenticity production and plagiarism detection as its effectiveness on implementing this type of project. Since the students are asked to create their own product in digital multimodal, they will try to generate the ideas originally. It can highlighted that the model is assumed to be applicable in making students to use their critical thinking. However, Cousin (2021) still emphasized that the creative process in composition need to be considered more compared to the product itself since it can help the teacher to appreciate students' productivity and creativity. Further, this study exposed that digital multimodal composition evaluate meaning-making in processing written text to digital multimodal mode. The study of Kim & Belcher (2020) indicated that the students has generally positive perception toward digital multimodal composition since it is very effective in meaning making. Compared to traditional writing, they added, this process and product of writing improved the students' writing skills. The previous study by Gagich (2018) also claimed that digital multimodal composition project disrupt traditional academic writing conventions. This point can promote students' agency, and effectively integrated rhetorical strategies to reach real audience via online. Ho (2022) revealed that by orchestrating written text to digital multimodal, it required the students to mobilize a wide range of semiotics resources. It contributed the creation of a translanguaging space and make the students to creatively and critically distinct the inside and outside classroom knowledge.

Recommendations

From the series activities that have been carried out, it can be concluded that digital multimodal composition is a writing activity that can be integrated with other language skills such as speaking, listening, reading and grammar and vocabulary in the form of multimodal digital media uploaded to social media. The students are given the freedom to choose the theme they will write and publish on their social media. The main purpose of this learning innovation is to increase the ability and creativity in creating English digital written content such as blogs, vlogs, YouTube, and even memes. With

this learning innovation activity, students are expected to have additional abilities that can be used to create their own jobs such as becoming a social media specialist, youtuber, vlogger, blogger, celebrity, graphic designer, and even a social media traveller. Further, the teacher must consider this type of learning mode to engage students to be more creative in generating and producing their ideas.

Limitations of Study

This study is limited in some short of points since it only surveys in limited place, participants, and time. Thus, the finding of this study can be said to reflect the whole point in holistic manners about creativity in digital multimodal composition. Therefore, it is a need to extend more about creativity consciousness in digital multimodal composition in different perspective such as the perspective of teachers.

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Research Article

Investigation of attitudes and self-efficacy of mathematics teachers towards gifted education

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Abstract

Some of the problems in the education of gifted students are based on the qualifications of the teachers. Teachers' attitudes and perceptions towards gifted students have a significant impact on the education to be provided to gifted students. It is thought that it is important to determine the general attitudes and perceptions of teachers and to provide required information to teachers in order to achieve the purpose of gifted education. In this study, it is aimed to determine the attitudes and self-efficacy of mathematics teachers towards gifted education within the scope of basic education and/or gifted education. In the study, the survey method was used to determine the relationships between two or more variables. The sample of the study consists of mathematics teachers working in Niğde province. In this study, the attitudes and self-efficacy of elementary and high school mathematics teachers towards giftedness and gifted education were tried to be relationally revealed. The data collection tools of the study were ASGE-the attitude scale for gifted education- (Tortop, 2014a) and GESST- the gifted education self-efficacy scale for teachers (Tortop, 2014b). As a result of the research, it was revealed that there was no expected relationship between attitude and self-efficacy, but the expected relationship was seen in the sub-dimensions of both scales. It was concluded that teachers with high attitudes towards gifted education showed a high tendency to create gifted classes. It was concluded that teachers with high academic qualification had similar levels of mentoring qualification, personal traits and instructional planning qualification. It was concluded that teachers' attitudes and self-efficacy towards creating special ability classes according to the needs of gifted students had a moderate relationship. It was concluded that teachers mostly agree on supporting the needs of gifted students with special services where as they generally do not support the idea of creating special ability classes according to the needs of gifted students. Moreover, teachers' attitudes do not change according to their personal traits and their attitudes towards the needs and support of gifted students are less related to their creativity. Analysis reveals that there is no significant difference was found according to age of the participants; however, regression analysis revealed that the 46-50 age group was a predictor of creating gifted classrooms.

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Introduction

In the historical development of societies, it is known that there are gifted individuals with leadership and productivity skills among the people who direct the society (Uzun, 2004: 24). In the history of the education, Enderun School in the Ottoman Empire was the first educational institution in the world in terms of its scope, systematicity and planning (Enç, 2005). Later in the 19th century, the concept of giftedness turned into a scientific concept and there were changes in the definitions of this concept over time. The term of "giftedness" has become an expression often used for people who are

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thought to have an extraordinary ability (Taber, 2017). Ministry of National Education (2012) defined gifted individuals as students who with an IQ score of 130 and above; as determined by experts and who perform at a high level compared to their peers. When the definitions in the literature are examined, Dağlıoğlu and Suveren (2013) stated that talent includes intelligence, therefore these definitions can be expressed with a single term under the term "giftedness", but there may be various definitions.

Gifted children, who have a rich vocabulary, advanced verbal skills, fluency, extraordinary thinking, leadership capacity, creativity and high-level problem-solving skills compared to their peers, have been important for societies throughout history (Davaslıgil, 2004; Sak, 2011a). It is considered quite essential today to bring the talents of all individuals to the best level. This understanding of education has made the education of gifted individuals more important. Giftedness is generally defined for students in three groups. These groups are classified as those who have talent in areas such as sports, music, and art; those who have an academic ability, and those who have versatile talents (Taber, 2017). It is aimed to develop these skill areas in institutions where gifted individuals receive special education.

There are two opposing views of teachers for gifted students: the congruence hypothesis and the dissonance hypothesis. The congruence hypothesis states that gifted students are superior in all areas, including social and academic life (Mottus et al., 2008; Persson, 1998). On the other hand, the dissonance hypothesis states that high ability has a cost and is associated with some negative traits such as social and emotional deficits (Neihart & Yeo, 2018). This shows that living with the gifted and providing education to these people includes difficulties as well as conveniences.

Ataman (2003) stated that education programs prepared for students with normal development are not suitable for gifted students, they get bored at school and lose their motivation because they learn fast. In order for gifted individuals to receive education appropriate to their abilities, it is significant to identify, recognise their giftedness and educate them in accordance with their abilities (Hong et al., 2011; Katerina et al., 2010; Siegle, 2001). In the identification of gifted individuals at an early age, diagnostic criteria, including nominations by teachers, are widely used (Clark, 2013; Sak, 2011b). Kaya (2015) stated that the approach that teachers have or adopt about the concept of giftedness will affect their presentation of programmes, materials and identification of gifted students. It is very important for teachers to have sufficient knowledge about gifted individuals, for these individuals to be identified and to receive a more qualified education. In this respect, determining teachers' attitudes and perceptions about giftedness has an important place in terms of education quality and efficiency of gifted education.

Gifted individuals need special education. When the needs of children in need of special education are not fulfilled, inequality, which is seen as a problem in the sociology of education (Doğan. 1998:53), emerges. The education of the gifted is also an important step towards providing equal opportunities in education (Ministry of Education, 1991:15). Since 1993, the General Directorate of Special Education Guidance and Counseling Services under the Ministry of National Education has been carrying out various studies for the education of gifted individuals in Turkiye. In the institutions opened under the name of Science and Art Center, it is aimed to identify and develop mental activity abilities and capacities of students with superior intelligence and talent at a young age, to ensure that they are aware of their characteristics, and to enable them to use their skills at a high level by developing their capacities (Ministry of Education, 2013). Science and Art Centers were first opened in Ankara in 1995 and served out-of-school with the program prepared for gifted students. Over time, by spreading these institutions throughout the country, more students were reached.

In order to increase the quality of education of gifted students, there are various approaches in the training of teachers in countries around the world. In some countries, these trainings are given during undergraduate education, while in some countries they are given after undergraduate education. In some countries, it is seen that such training is not provided. In countries such as Portugal, Spain, France and Italy, there are not any programs for the training of teachers of gifted students (Şahin, 2015). In our country, it is seen that there are a small number of "Gifted Education Teaching" programs in teacher training programs in universities and there are courses required for gifted education in the undergraduate programs in a small number of education faculties.

Attitude, self-efficacy concepts and their importance for teachers

Attitude is the individual's tendency to react to the object, subject or event in his or her environment. In this tendency, the person's knowledge, emotions and motivation are very important. İnceoğlu (2011) stated that attitude consists of "cognitive, affective and behavioral" dimensions. These dimensions are consistent among themselves. Arkonaç (2016) emphasizes that attitude is an evaluation of attitude objects. In addition, it states that attitudes can be at personal, interpersonal and intergroup levels and that attitudes affect intention and intention affects behavior. Considering the impact of attitudes on behavior; Attitudes are very important in an individual's perspective on any issue (Sevim & Kaya, 2023). The attitudes of teachers towards the supervision process in schools is an issue that should be taken into consideration in terms of the functionality of the supervision system and the feedback to the supervision system. In this respect, this research examined teacher attitudes towards the education of gifted individuals.

The concept of self-efficacy appears as one of the important factors affecting the capacity and success potential of the human phenomenon, which plays a role in many technical and social systems both in business life and social life. The foundation of the concept of self-efficacy, which has been the subject of many studies over time, was first laid by Bandura in 1977. Bandura (1986) defined the concept of self-efficacy as a person's judgment regarding his or her capacity to organize and carry out the activities necessary to demonstrate the targeted performance. In addition, (Yıldız, 2015) stated that it is a concept closely related to various skills such as the individual's motivation to take action towards achieving the task or goal, determination to progress, and the power to resist the obstacles he encounters. The concept of self-efficacy refers to the person's belief in these skills rather than expressing the state of being competent in skills. The use of the concept of self-efficacy over time has meant that the important thing in this concept is closely related to the belief in being able to perform this action (Çapri and Kan, 2007). Considering these definitions of the concept of self-efficacy, it is thought that teachers' self-efficacy regarding the education of gifted individuals is an issue that should be taken into consideration. In this respect, this research examined teacher attitudes towards the education of gifted individuals.

Importance of research

In the education to be offered to the gifted, the qualifications that teachers should have are of great importance. Teachers' personal characteristics and professional competences are exceedingly effective in the development process of gifted students. This is because teachers affect students' academic, cognitive and affective development (Ford & Trotman, 2001). Teachers' attitudes towards gifted students and their perceptions about these students also affect the education to be provided to gifted students. In order for the education offered to the gifted students to achieve its purpose, it is necessary to determine the general attitudes and perceptions of teachers and to provide the required information to teachers.

Teachers' attitudes towards gifted students represent their implicit views about gifted students, which in turn affect their behaviors towards them (Akgül, 2021). Şahin (2015) lists some of the characteristics that teachers who teach gifted students should have as being interested in new developments in education, being motivated by student learning, being a patient listener, having a broad general culture, having good academic success in student life, having systematic and programmed study habits. being open to criticism, being able to cooperate with other experts and not being judgmental, being able to create a sense of trust in students, having democratic attitudes, thinking flexibly and being tolerant. Teachers' attitudes and perceptions towards gifted students are an important factor in their endeavours to have these characteristics.

Among the components of the phenomenon investigated in this study; there are many studies on the attitude towards the education of gifted students. There is an extensive literature on teachers' attitudes towards the education of their gifted students. There is inconsistency in the literature regarding these attitudes of teachers. While some individuals are positive about the education of gifted people (Erdogan, 2017; Jurisevi & Zerak, 2019; Krijan & Boric, 2015). On the other hand, it is reported that some biological reproductions have negative attitudes (Allottey, 2020; Nyarko et al., 2017) or indecision (Kunt and Tortop, 2017; Tortop and Kunt, 2013) towards the education of gifted people. While in some cases it has been reported that there are contrary situations (Lassig, 2003), in some cases the contrary has not been reported (Tortop & Kunt, 2013).

Studies on the other component of the study, self-efficacy towards gifted education, have also contributed to the field. Although there are few studies evaluating teachers' self-efficacy towards gifted students, Dinçer (2019) found that self-efficacy was slightly higher. This study found no significant gender differences in self-efficacy; However, other differences in age and gender were also noted among participants on some subscales. The results of previous studies (Dinçer, 2019) suggest that improving teachers' self-efficacy can be effective on teaching gifted students.

However, any study conducted with mathematics teachers examining the relationship between the attitude towards the education of the gifted and their self-efficacy regarding the education of the gifted has not been encoutered. In this respect, it is thought that the current study will contribute to the field in terms of trying to reveal whether there is a relationship between the attitude towards the gifted education and self-efficacy towards gifted education. In addition, it is thought that this study is of great importance in the mathematics education of gifted students.

The first thesis in the field of mathematics education of gifted students was published in 2002, and it has been found that approximately 42 master's and 23 doctoral theses have been completed to date (Kirişçi, 2023). A large proportion of the theses completed are master's theses. According to the studies of Sak et al. (2015), the doctoral theses examined are approximately one quarter of the master's theses. In addition, 66 articles in the field of mathematics education have been identified in national and international journals publishing in the field of gifted children and education since 2000, 51 of which were published in international and 15 in national journals (Demirci & Tertemiz, 2022). There are a total of 4 articles in international journals examining the attitudes and approaches of teachers and parents of gifted students towards being talented in mathematics and towards mathematics lessons (Demirci & Tertemiz, 2022). In international studies, it has been observed that technology is a frequent subject of research for gifted students, both in mathematics education and in other fields (Duda et al., 2010; Periathiruvadi & Rinn, 2012). When these studies conducted in the field of mathematics education of gifted students were examined, no studies were found that determined the attitudes and self-efficacy of mathematics teachers towards the education of gifted students.

Teachers play a critical role in the mathematics education of specially talented students, both in terms of academic development and in their social-emotional development. The roles of teachers of students with special talents in mathematics from pre-school to secondary education may also differ within themselves. The ability to fully fulfill all these roles is directly related to the competencies of teachers of students with special talents in mathematics (Croft, 2003). Research on teachers of gifted students shows that teachers are mostly inadequate in preparing and implementing activities (Cengizhan, 2019; Girgin, 2020) and creating individualized education plans for gifted students (Bedur et al., 2015; Serin & Korkmaz, 2014) and that they need training. shows what they heard. In addition, it has been determined that in-service trainings focusing on gifted students enable teachers to be aware of the individual abilities and characteristics of gifted students (Erişen et al., 2015; Kazu & Şenol, 2012). In this regard, determining the attitudes and self-efficacy of mathematics teachers towards the education of gifted children has an important place.

Purpose of the Study

Gifted students should be given the opportunity to transform their current potential into performance through training appropriate to their abilities (Saltık Ayhanöz, 2022). One of the most serious problems in the education of gifted students is the qualifications of the teachers who will teach them. Teachers of gifted students should be more talented and more imaginative than other teachers (Lewis, 1982). In order to make a proper diagnosis of gifted students, it is very important that classroom teachers have a positive attitude as well as having sufficient knowledge about "gifted students" (Tortop & Kunt, 2012). The approach and philosophical perspective of teachers towards different children and their education is quite influental, because the teacher's view of education has a great impact on teaching approaches (Dağlı, 2014). In this research, it is aimed to reveal the attitudes and self-efficacy of mathematics teachers towards the education of gifted students within the scope of basic education and/or special education. The problem of the study;

- What is the level of mathematics teachers' attitudes towards gifted education and their self-efficacy towards gifted education?
- Do the attitudes of mathematics teachers towards the education of gifted students differ according to gender?

- What is the relationship between the self-efficacy and their attitude scores of mathematics teachers regarding the education of the gifted?

Method

Research Model

In the study, survey method was used to determine the relationships between two or more variables. The survey method aims to describe a past or present situation as it exists (Karasar, 2006). In this study, it was tried to determine the attitudes and self-efficacy of primary and high school mathematics teachers towards giftedness and gifted education in a relational manner. Researches conducted in the relational research model are studies conducted to determine the level of relationship between variables, without looking at the cause-effect relationship between two or more variables (Büyüköztürk et al., 2016). In this study, the relational model was used to determine whether it has caused change on the attitudes and self-efficacy of gifted students according to demographic information variables such as gender and marital status.

Study Group

The population of this research consists of all mathematics teachers in Niğde province, and the sample consists of mathematics teachers who can be reached within the universe. In this study, convenient sampling method was used depending on the factor of easy accessibility. The convenient sampling method is a method that accelerates the research. Because with this method, the researcher selects the participants who are suitable in terms of both accessibility and proximity (Dawson & Trapp, 2001; cited in Kılıç, 2013). The required permissions were obtained from the teachers to participate in the study. The principle of voluntariness was adhered to in participation in the study.

Table 1. Socio-demographic information on participants

Variables	Group	f	%
Gender	Female	102	59.6
	Male	69	40.4
Marital Status	Married	83	48.5
	Single	88	51.5
Age	25-30 years	83	48.5
	31-35 years	21	12.3
	36-40 years	30	17.5
	41-45 years	24	14
	46-50 years	13	7.6

Table 1 presents that there were 102 (59.6%) female teachers and 69 (40.4%) male teachers. Of the participants there were 83 (48.5%) married participants and 88 (51.5%) single participants. As for the age of teachers, there were 83 (48.5%) participants whose ages ranged from 25 to 30 years, 21 (12.3%) participants whose ages ranged from 31 to 35 years, 30 (17.5%) participants whose ages ranged from 36 to 40 years, 24 (14%) participants whose ages ranged from 41 to 45 years and 13 (7.6%) participants whose ages ranged from 46 to 50 years.

Data Collection Tools

Attitude Scale towards Gifted Education (ASGE)

This scale was used to determine teachers' attitudes towards gifted education. The original scale which was developed by Gagne (1991) had 34 items. The Turkish adaptation of the scale was conducted by Tortop (2014a). As a result of the adaptation study of the scale, 14 items remained. In its current form, the scale consisted of three dimensions: the Needs and Support of the Gifted Children (NSGC), the Opposition to Special Services for the Gifted (OSSG), and the Creation of Special Ability Classes (CSAC). In this study, the Cronbach alpha was calculated as .78 for ASGE and internal consistency coefficients for subscales were determined as .73 for Needs and Support of the Gifted Children

(NSGC); .70 for Opposition to Special Services for the Gifted (OSSG) and .73 for Creation of Special Ability Classes (CSAC). Information related to the evaluation of mean values of the scale and subscales is shown in Table 2.

Table 2. *Information about the evaluation of mean of the ASGE and subscales*

Scale	Item	Totally disagree	Disagree	Not sure	Agree	Totally agree
NSGC	7	7-12.5	12.6-18.1	18.2-23.7	23.8-29.3	29.4-30
OSSG	3	3-5.3	5.4-7.7	7.8-10.1	10.2-12.5	12.6-15
CSAC	4	4-7.1	7.2-10.3	10.4-13.5	13.6-16.7	16.8-20
ASGE	14	14-25.1	25.2-36.3	36.4-47.5	47.6-58.7	58.8-70

NSGC: Needs and Support of the Gifted Children, **OSSG:** Opposition to Special Services for the Gifted, **CSAC:** Creation of Special Ability Classes, **ASGE:** Attitude Scale towards Gifted Education

Gifted Education Self-efficacy Scale for Teachers (GESST)

The scale was used to determine teachers' self-efficacy regarding gifted education. GESST was developed by Tortop (2014b). The scale consisted of 26 items, including 6 dimensions as Academic Qualification (AQ), Mentorship Qualification (MQ), Responsibility (R), Personality Traits (PT), Creativity Fostering Qualification (CFQ), Instructional Planning Qualification (IPQ). In this study, the Cronbach alpha was calculated as .92 for GESST and internal consistency coefficients for subscales were determined as .75 for Academic Qualification (AQ); .85 for Mentorship Qualification; .73 for Responsibility (R); .86 for Personality Traits (PT); .83 for Creativity Fostering Qualification (CFQ) and .85 for Instructional Planning Qualification (IPQ). Information related to the evaluation of mean values of the scale and subscales is shown in Table 3.

Table 3. Information about the evaluation of mean of GESST and subscales

Scale	Item	Totally disagree	Disagree	Not sure	Agree	Totally agree
AQ	3	3-5.3	5.4-7.7	7.8-10.1	10.2-12.5	12.6-15
MQ	4	4-7.1	7.2-10.3	10.4-13.5	13.6-16.7	16.8-20
R	3	3-5.3	5.4-7.7	7.8-10.1	10.2-12.5	12.6-15
PT	7	7-12.5	12.6-18.1	18.2-23.7	23.8-29.3	29.4-30
CFQ	6	6-10.7	10.8-15.5	15.6-20.3	20.4-25.1	25.2-30
IPQ	3	3-5.3	5.4-7.7	7.8-10.1	10.2-12.5	12.6-15
GESST	26	26-46.7	46.8-67.5	67.6-88.3	88.4-109.1	109.2-130

AQ: Academic Qualification, **MQ:** Mentorship Qualification**, R:** Responsibility **PT:** Personality Traits, **CFQ:** Creativity Fostering Qualification, **IPQ:** Instructional Planning Qualification, GESST**:** Gifted Education Self-Efficacy Scale for Teachers

Process

In line with the research permission obtained from the Niğde Provincial Directorate of National Education, the mathematics teachers working in the province of Niğde were provided to fill in the forms related to the scales in the study online.

Data Analysis

The data were analyzed using the SPSS (Version 24) program. Frequency tables were created for sociodemographic questions. Independent sample t-test was applied to see the differences in the means of the variables for the scales that meet the normality assumption. One-way ANOVA test was used to see the results of the scales based on the age variable. Independent sample t-test was applied to see the differences in the means of the variables of gender and marital status for the scales that meet the normality assumption. To see the difference in the means of the variable of age for the scales one-way variance analysis (ANOVA) was applied. Linear regression analysis was conducted to see the scales and variables that predict the needs of gifted and support, opposition to gifted special services, and attitude scales towards gifted education. In addition, Pearson correlation analysis was applied for scales and variables conforming to normal distribution in order to learn the relationship and direction between scales and variables. Analyzes were applied at alpha= .05.

Table 4. descriptive analysis and normality assumptions of scales

Variable	N	*X*	Std. Deviation	Kolmogorov-Smirnov (p)	Skewness	Kurtosis	Cronbach Alpha
NSGC	171	26.49	3.63	.000	-.50	1.03	.739
OSSG	171	10.64	2.37	.000	-.42	-.36	.709
CSAC	171	11.79	3.13	.004	.12	-.48	.730
ASGE	171	48.92	6.71	.200	-.18	.69	.784
AQ	171	9.26	2.24	.000	-.10	-.76	.752
MQ	171	13.01	3.22	.000	-.46	-.11	.853
R	171	10.61	2.08	.000	-.64	.64	.739
PT	171	26.87	3.79	.000	-.30	.64	.866
CFQ	171	23.82	2.83	.000	-.81	1.52	.838
IPQ	171	10.77	2.09	.000	-.34	.05	.852
GESST	171	94.33	12.24	.023	-.50	.59	.926

Note. p< 0,05

In Table 4, the descriptive statistics and normality assumptions of scales and sub-scales are given. When the Kolmogorov - Smirnov value of the attitude and self- efficacy scales towards gifted education is examined, it is seen that it meets the normality assumptions so it can be stated the data has normal distribution (George & Mallery, 2010). Since, Kurtosis and skewness values do not exceed the ±2 limits, parametric tests will be used in analyses related to scales.

The reliability levels of all scales are sufficient. The Cronbach alpha coefficient between .60 and .80 indicates that the scale is moderately reliable, and between 0.80 and 1.00 indicates that the scale is highly reliable (Kayış, 2009; Kılıç, 2016).

Results

Table 5. Mathematics teachers' views related to their attitudes and self-efficacy levels towards gifted education

Scale	**N**	**Min.**	**Max.**	$\overline{X}$	**Std.Deviation**	**Level**
ASGE	171	27	68	48.92	6.71	Agree
GESST	171	51	122	94.33	12.24	Agree

In Table 5, the lowest score of the mathematics teachers' ASGE scale is 27 and the highest score is 68. The mean score of the teachers is "$\overline{X}$=48.92" and the standard deviation is "6.71" for this scale. In addition, the lowest score obtained from the GESST scale is 51 and the highest score is 122. The mean score of the teachers is $\overline{X}$=94.33" and the standard deviation is "12.24". Accordingly, it was determined that mathematics teachers participated in the statements in the ASGE and GEEST scales above the medium level.

Table 6. *T-test results of scales according to gender*

Scales	**Group**	**N**	$\overline{X}$	**S.D.**	**t**	**df**	**p**
Attitude Scale towards Gifted Education (ASGE)	Female	102	49.52	6,.54	1.439	169	.152
	Male	69	48.03	6.90			
Gifted Education Self-efficacy Scale for Teachers (GESST)	Female	102	94.09	12.20	-.305	169	.761
	Male	69	94.68	12.39			

Note. p< .05

In Table 6, independent samples t-test results of the scales according to the gender variable are given. A significant difference in favor of gender was not found between groups according to the attitude scale towards gifted education (p=.152 > .05). Moreover, a statistically significant difference between the groups according to the self-efficacy scale regarding the education of gifted people in terms of gender variable was not found (p=.761> .05).

Table 7. T-test results of scales according to marital status

Scales	Group	N	$\bar{X}$	S.D.	t	df	p
Attitude Scale towards Gifted Education (ASGE)	Married	83	50.09	5.84	2.245	169	.026
	Single	88	47.82	7.30			
Gifted Education Self-efficacy Scale for Teachers (GESST)	Married	83	94.11	12.54	-.233	169	.816
	Single	88	94.55	12.02			

Note. p< .05

In Table 7, independent samples t-test results of the scales according to the marital status variable are given. As it can be seen in Table 7, in terms of marital status variable, a statistically significant difference was found between the groups according to the attitude scale towards gifted education ($t_{(169)}$=2.245, p<0.05). The mean score of the married people's attitude scale towards gifted education ($\bar{X}$= 50.09) is significantly different and larger than the single people's attitude scale mean score ($\bar{X}$= 47.82) towards gifted education. On the other hand, it is not found a statistically significant difference between the groups in favor of the marital status variable according to the self-efficacy scale regarding the education of the gifted (p=.816>0.05).

Table 8. ANOVA results of scales according to age

Scale	Age	N	$\bar{X}$	S.D.	df	F	p
ASGE	25-30	83	48.16	6.77	4-166	1.013	.402
	31-35	21	49.19	5.34			
	36-40	30	48.63	7.75			
	41-45	24	50.25	6.09			
	46-50	13	51.53	6.75			
GESST	25-30	83	94.26	10.77	4-166	.200	.938
	31-35	21	94.80	16.11			
	36-40	30	95.73	11.07			
	41-45	24	93.16	13.88			
	46-50	13	92.92	14.90			

ASGE: Attitude Scale towards Gifted Education **GESST**: Gifted Education Self-efficacy Scale for Teachers

In Table 8, one-way ANOVA test results of the scales to the age variable are given. A significant difference in favor of age was not found between groups according to the attitude scale towards gifted education (p=.402 > .05). Moreover, a statistically significant difference between the groups according to the self-efficacy scale regarding the education of gifted people in terms of gender variable was not found (p=.938> .05).

Table 9. Correlation analysis of scales and subscales

	NSGC	OSSG	CSAC	ASGE	AQ	MQ	R	PT	CFQ	IPQ	GESST
NSGC	1										
OSSG	.268**	1									
CSAC	.196*	.493**	1								
ASGE	.728**	.728**	.747**	1							
AQ	.080	.091	-.090	.033	1						
MQ	-.034	.155*	-.030	.023	.618**	1					
R	.029	.184*	-.018	.073	.392**	.340**	1				
PT	.115	.139	-.013	.105	.458**	.494**	.336**	1			
CFQ	.112	.167*	.024	.131	.338**	.409**	.317**	.676**	1		
IPQ	-.020	.086	-.103	-.028	.539**	.558**	.401**	.490**	.625**	1	
GESST	.069	.186*	-.043	.083	.724**	.776**	.577**	.820**	.770**	.780**	1

Note. **p<.01; * p<.05 **NSGC**: Needs and Support for Gifted Children **OSSG**: Opposition to Special Services for the Gifted **CSAC**: Creating Special Ability Classes **ASGE**: Attitude Scale towards Gifted Education **AQ**: Academic Qualification **MQ**: Mentorship Qualification **R**: Responsibility **PT**: Personality Traits **CFQ**: Creativity Fostering Qualification **IPQ**: Instructional Planning Qualification **GESST**: Gifted Education Self-efficacy Scale for Teachers

There is a positive correlation with 99% confidence between the sub-scale of Needs and Support for Gifted Children (NSGC) and Opposition to Special Services for the Gifted (OSSG) (r=.268 / low level), a positive correlation with 95%

confidence between Creating Special Ability Classes (CSAC) (r=.196 / low level), and a positive correlation with 99% confidence between Attitude Scale towards Gifted Education (ASGE) (r=.728 / high level).

There is a positive correlation with 99% confidence (r=.493 / medium level) between Opposition to Special Services for the Gifted (OSSG) and Creating Special Ability Classes (CSAC), between Attitude Scale towards Gifted Education (ASGE) with 99% confidence (r=.728 / high level), between Mentorship Qualification (MQ) with 95% confidence (r=.155 / very low level), There is a positive relationship between Responsibility (R) with 95% confidence (r=.184 / very low level), Creativity Fostering Qualification (CFQ) with 95% confidence (r=.167 / very low level) and Gifted Education Self-efficacy Scale for Teachers (GESST) with 95% confidence (r=.186 / very low level).

There is a positive correlation (r=.747 / high level) between Creating Special Ability Classes (CSAC) and Attitude Scale towards Gifted Education (ASGE) with 99% confidence.

Academic Qualification is positively correlated with Mentorship Qualification (MQ) with 99% confidence (r=.618 / medium level); between Responsibility (R) with 99% confidence (r=.392 / low level), between Personality Traits (PT) with 99% confidence (r=.458 / medium level), between Creativity Fostering Qualification (CFQ) with 99% confidence (r=.338 / low level), there is a positive relationship between Instructional Planning Qualification(IPQ) with 99% confidence (r=.539 / medium level), there is a positive relationship between); between Gifted Education Self-efficacy Scale for Teachers (GESST) with 99% confidence (r=.724 / high level).

There is a positive correlation with 99% confidence between Mentorship Qualification (MQ) and Responsibility (R) (r=.340 / low level), a positive correlation with 99% confidence between Personality Traits (PT) (r=.494 / medium level), a positive correlation with 99% confidence between Creativity Fostering Qualification (CFQ) (r=.409 / medium level), a positive correlation with 99% confidence between Instructional Planning Qualification(IPQ) (r=.558 / medium level), and a positive correlation with 99% confidence between Gifted Education Self-efficacy Scale for Teachers (GESST) (r=.776 / high level).

There is a positive relationship with 99% confidence between Responsibility (R) and Personality Traits (PT) (r=.336 / low level), a positive relationship with 99% confidence between Creativity Fostering Qualification (CFQ) (r=.317 / low level), a positive relationship with 99% confidence between Instructional Planning Qualification (r=.401 / medium level), and a positive relationship with 99% confidence between Gifted Education Self-efficacy Scale for Teachers (GESST) (r=.577 / medium level).

There is a positive relationship with 99% confidence between and Personality Traits (PT) and Creativity Fostering Qualification (CFQ) (r=.676 / high level), a positive relationship with 99% confidence between Instructional Planning Qualification(IPQ) (r=.490 / medium level), and a positive relationship with 99% confidence between Gifted Education Self-efficacy Scale for Teachers (GESST) (r=.820 / very high level).

There is a positive correlation with 99% confidence (r=.625 / high level) between Creativity Fostering Qualification and Instructional Planning Qualification(IPQ), and a positive correlation with 99% confidence (r=.770 / high level) between Gifted Education Self-efficacy Scale for Teachers (GESST). There is a positive relationship (r=.780 / high level) between Instructional Planning Qualification(IPQ) and Gifted Education Self-efficacy Scale for Teachers (GESST) with 99% confidence.

Table 10. Regression Analysis Related to the Prediction of GESST on OSSG

Predicted	Predictor	B	Std. Error	β	t	p
OSSG	(Constant)	7.252	1.391		5.215	.000
	GESST	.036	.015	.186	2.454	.015

R= .186 R^2= .034 $F_{(1,169)}$= 6.025 p=.015

OSSG: Opposition to Special Services for the Gifted, **GESST**: Gifted Education Self-efficacy Scale for Teachers

Table 10 presents the findings obtained from the linear regression analysis applied to examine the prediction of the score of opposition to special services for gifted students. Gifted Education Self-efficacy Scale for Teachers (GESST) score significantly and positively predicted the score of Opposition to Special Services for Gifted Students (β= .186; p<0.05). In terms of GESST, teachers' self-efficacy for gifted education explained 3.4% of Opposition to Special Services

for Gifted (OSSG) dimension of Attitudes Scale for Gifted Education.

Table 11. Regression analysis related to the prediction of mentorship qualifications on OSSG

Predicted	Predictor	B	Std. Error	β	t	p
OSSG	(Constant)	9.149	.749		12.207	.000
	MQ	.114	.056	.155	2.046	.042

R= .155 R^2= .024 $F_{(1,169)=}$ 4.187 p=.042

OSSG: Opposition to Special Services for the Gifted, **MQ**: Mentorship Qualification

When the findings in Table 11 are analysed, teachers' views on Mentorship Qualification (MQ) significantly predicted their views on Opposition to Special Services for Gifted (OSSG) dimension of Attitudes Scale for Gifted Education (R=.155, *R* 2 =.024) (F(1,169)=4.187, p< .05). Teachers' views on Mentorship Qualification (MQ) explained 2.4% of the total variance for OSSG. According to this, it can be said that Mentorship Qualification (MQ) is a significant predictor on Opposition to Special Services for Gifted (OSSG).

Table 12. Regression analysis related to the prediction of responsibility on *OSSG*

Predicted	Predictor	B	Std. Error	β	t	p
OSSG	(Constant)	8.421	.927		9.087	.000
	Responsibility	.209	.086	.184	2.438	.016

R= .034 R^2= .028 $F_{(1,169)=}$ = 5,942 p=.016

OSSG: Opposition to Special Services for the Gifted

In Table 12, the findings obtained from the linear regression analysis applied to examine the prediction of the score of the sub-scale of Opposition to Special Services for the Gifted (OSSG) are presented. Responsibility dimension score significantly and positively predicts the score of Opposition to Special Services for the Gifted (OSSG) (β= .184; p< .05). Responsibility scale explains 2.8 % of the scale score of being against special services for the gifted.

Table 13. Regression analysis related to the prediction of creativity fostering qualification on OSSG

Predicted	Predictor	B	Std. Error	β	t	p
OSSG	(Constant)	7.300	1.522		4.795	.000
	CFQ	.140	.063	.167	2.208	.029

R= .167 R^2= .028 $F_{(1,169)=}$ 4.874 p=.029

OSSG: Opposition to Special Services for the Gifted, **CFQ**: Creativity Fostering Qualification

Table 13 shows the findings obtained from the linear regression analysis applied to examine the prediction of Creativity Fostering Qualification (CFQ) score on the sub-scale of Opposition to Special Services for the Gifted (OSSG). According to the findings in Table 13, teachers' Creativity Fostering Qualification (CFQ) score significantly and positively predicted the scale score of Opposition to Special Services for the Gifted (OSSG) (β= .167; p<.05). Creativity Fostering Qualification (CFQ) explains 2.8% of the total variance of Opposition to Special Services for the Gifted (OSSG).

Table 14. Regression analysis for predicting the score of the scale of creating special ability classes

Predicted	Predictor	B	Std. Error	β	t	p
CSAC	(Constant)	11.554	.342		33.782	.000
	Age 46-50	1.984	.928	.168	2.135	.034

R= .183 R^2= .034 $F_{(4,166)}$= 1.443 p=.034

CSAC: Creating Special Ability Classes

In Table 14, the findings obtained from the linear regression analysis applied to examine the prediction of the score of the scale of Creating Special Ability Classes (CSAC) are given. If the age is between 46-50 (reference=Age 25-30), the score of creating special ability classes scale increases by 1.984 points (β= .168; p< .05). The age between 46-50 explains 3.4% of the sub-scale of Creating Special Ability Classes.

Table 15. Regression analysis for predicting the score of the scale of attitude scale towards gifted education

Predicted	Predictor	B	Std. Error	β	t	p
ASGE	(Constant)	50.096	.728		68.803	.000
	Marital Status	-2.278	1.015	-.170	-2.245	.026

R= .029 R^2= .023 $F_{(1,169)}$= 5.038 p=.026

ASGE: Attitude Scale towards Gifted Education

Table 15 shows the findings obtained from the linear regression analysis applied to examine the prediction of the Attitude Scale towards Gifted Education (ASGE) score. If the marital status is single 46-50 (reference=Married), the attitude towards gifted education scale score decreases by 2,278 points (β= -.170; p<0,05). The marital status variable explains 2,9% of the Attitude Scale towards Gifted Education (ASGE).

Discussion and Conclusion

In the study in which the attitudes of mathematics teachers towards gifted education and their self-efficacy towards gifted education were examined, it was firstly examined the relationship between teachers' attitudes towards gifted education and their self-efficacy towards gifted education according to the results of the correlation analysis conducted, a significant relationship was not found between teachers' attitudes and self-efficacy. Thus, it was revealed that there was not an expected relationship between attitude and self-efficacy, but the expected relationship was seen in the sub-scales of both scales. According to the results of the research in the literature; it was determined that the mean scores of teachers' self-efficacy were high (Dinçer, 2019). It was also observed that pre-service teachers in Germany and Australia had lower self-efficacy in teaching a gifted student (Matheis, Kronborg, Schmitt, & Preckel, 2017).

Then, it was examined that whether teachers' attitudes towards gifted education varied according to gender. According to the findings, teachers' attitudes towards gifted education did not change significantly according to gender. Similarly, teachers' self-efficacy towards gifted education did not change significantly according to gender. As it is understood from this study, attitudes and self-efficacy characteristics related to gifted education did not vary according to gender. Similarly, Molapo and Salyers (2014) found that there was no significant change in the sub-dimensions of the self-efficacy scale for gifted education according to gender variable. On the other hand, Vatansever Bayraktar, Kadıoğlu Ateş, and Afat (2019) found that classroom teachers' attitudes towards gifted education did not show a statistically significant change in the sub-scales of need for support, opposition to special services, and creating a classroom for gifted students and in general mean scores according to gender variable.

According to the independent samples t-test results of teachers' attitudes towards gifted education according to marital status variable, it was observed that married teachers had a more significant mean attitude score compared to single teachers. However, teachers' self-efficacy towards gifted education did not show a significant change according to marital status. The fact that attitudes towards gifted education differ according to marital status and that married teachers have more positive attitudes may be related to the experience gained. Similarly, there are studies showing that teachers' attitudes towards gifted students are typically affected by experience or lack of experience (Szymanski et al., 2018; Xiang et al., 2011). Again in the literature, when self-efficacy beliefs related to years of service are examined, it is seen that the most inexperienced group tends to see themselves as more competent in the education of gifted children, unlike other groups with more years of service (Oral, 2017).It was concluded that the self-efficacy beliefs of classroom teachers towards gifted education did not show a statistically significant difference according to the marital status variable (Vatansever Bayraktar, Kadıoğlu Ateş & Afat, 2019). Additionaly, ANOVA analysis reveals that there is no significant difference was found according to age of the participants; however, regression analysis revealed that the 46-50 age group was a predictor of creating gifted classrooms.

When the relationships between the sub-scales applied to the teachers were analysed, it was found that the teachers who were positive about the needs and support of the gifted had a high level relationship with their attitudes towards gifted education, a low level relationship with their opposition to special services for the gifted and a low level relationship with creating special gifted classes. It can be concluded that teachers mostly support the idea of supporting the needs of gifted students with special services, while they are less supportive of the idea of creating special classes

according to the needs of gifted students. A review of the literature shows that in Croatia, teachers have a positive attitude towards the needs, support and social value of gifted education, while they have a slightly negative attitude towards special provisions for the gifted (Perkovic´ Krijan et al., 2015). In the literature on gifted education, teachers mostly expressed their views on separate education or heterogeneous classrooms, the characteristics of teachers, the necessity of gifted education, and the educational needs of all stakeholders (families, teachers and children). In this respect, teachers did not see themselves as representatives of gifted education. Most of them had views in favour of separate classes or schools (Akgül, 2021). Another study found that teachers generally had little knowledge about enrichment methods and primarily used supplementary reading materials (Şahin & Levent, 2015). Most teachers talked about the importance of student identification and education. Teachers were of the opinion that gifted students need a higher quality education, but not from themselves, but from others (Akgül, 2021). Another study found that teachers' attitudes towards acceleration and enrichment were somewhat negative (Drain, 2008). It has been suggested that teachers can learn to differentiate curriculum and instruction in regular classrooms (Reis et al., 1993). In another study, it was found that although participants agreed that gifted education is necessary to meet the distinctive intellectual and emotional needs of gifted students, they tended to have negative attitudes towards gifted education in South Korea due to the highly competitive educational atmosphere. On the other hand, South Korean pre-service teachers acknowledged that taking a gifted education course can help in some way but not enough (Woo & Cumming, 2022).

It was concluded that there is a moderate relationship between teachers' attitudes and self-efficacy towards creating special ability classes according to the needs of gifted students. It was concluded that there was a high positive correlation between teachers' views on the needs of gifted students and their attitudes towards gifted education. This can be said that teachers who have positive attitudes towards gifted education have more positive attitudes towards the needs and supports of gifted students. Again, it can be said that teachers with high mentoring and responsibility competencies had a low level of perspective on the needs of gifted students. Similarly, the literature has shown that those who receive gifted education do not have higher attitudes towards gifted students and gifted education (Molapo & Salyers, 2014). Similarly, teachers with a high level of creativity that encourages competence have a very low level of perspective on the needs of gifted students. Torrance (1962) argued that the purpose of guidance/mentoring is not to encourage individuality and creativity, but to promote a healthy balance between individuality, creativity and appropriateness. On the other hand, teachers with high self-efficacy in gifted education have a very low level of perception of the needs of gifted students. Teachers' beliefs about creativity and practices about how to develop creativity were, to some extent, underpinned by their beliefs about gifted education (Chan & Yuen, 2015). The interviewed teachers believed that all students are gifted and that teachers should encourage and support students to reach their potential (Chan & Yuen, 2015). Given the relationship between attitude and behaviour, improving teachers' behaviour and pedagogy requires improving teachers' attitudes towards gifted children and their education (Lassig, 2009).

It can be concluded that teachers with high attitudes towards gifted education have a high tendency to create gifted classes. It was concluded that teachers with high academic qualification had similar levels of mentorship qualification, personal traits and instructional planning qualification. In the literature, it was concluded that the lowest scores received in the mentoring (guidance) activity were appropriate for personal traits and creativity fostering qualification (Oral, 2017). On the other hand, statistically significant results were found for qualification and attitude, which were examined as predictors of teachers' willingness to differentiate teaching for gifted students (Caldwell, 2012). The results of the analysis of metaphors about gifted children reflect various themes related to the characteristics of gifted children. This finding showed that they know the characteristics of these children, their differences from other children, their prevalence, and their superior characteristics (Akgül, 2021). Within the scope of planning teaching, in a study conducted in Finland, teachers supported the placement of these children in regular classes instead of separate classes for gifted students (Laine et al., 2019). Australian teachers, on the other hand, stated that gifted education practices such as ability grouping and acceleration were not labelled (Lassig, 2009). Another finding was that most Czech teachers had ambivalent attitudes towards gifted education due to fear of elitism (Portesov´a et al., 2011).

Teachers with high academic qualification had lower levels of responsibility and creativity fostering qualification, whereas they had high levels of self-efficacy in gifted education. Kirschenbaum (1989) found that highly creative teachers tend to have successful creative students and less creative teachers have less successful creative students. Teachers with high mentoring efficacy had low levels of responsibility, similar levels of personal traits, creativity fostering efficacy, and instructional planning efficacy, and high levels of self-efficacy in gifted education. Matheis et al. (2017) found that teachers can have a significant impact on the educational and personal development of gifted students, and it is important for teachers of gifted students to demonstrate professionalism and expertise not only in their field but also in the requirements of being an effective teacher (Khalil & Accariya, 2016). Gifted teachers can benefit from a variety of teaching methods and resources that can encourage creativity in gifted children (Donerlson, 2008). Another finding of another study is that gifted students emphasised how important it is for their teachers to be aware of their personal needs, to have confidence in their abilities, to be thoughtful, understanding and supportive (Khalil & Accariya, 2016).

Teachers with high levels of responsibility had low levels of personal traitss and creativity fostering qualification whereas they had similar levels of instructional planning competence and self-efficacy in gifted education. Teachers with rich personal traits had high levels of creativity fostering qualification and self-efficacy in gifted education, while their instructional planning qualification was at a similar level. Emphasising the importance of qualities of gifted students, such as leadership, persuasiveness, management skills and charisma, which are not necessarily linked to teaching skills per se, can be associated with personality traits (Khalil & Accariya, 2016). Again, teachers with high levels of creativity fostering qualification have high levels of instructional planning efficacy and self-efficacy in gifted education. Teachers with high levels of instructional planning efficacy also have high levels of self-efficacy in gifted education. With regard to instructional planning, developing the emotional development of gifted individuals is an integral part of a comprehensive and balanced curriculum. Students need to understand their own characteristics, the intensity of their emotions and their need for coping strategies to help them deal with their own problems (Tassel-Baska & Stambaugh, 2008).

Limitations of the Study

One of the limitations of this study is that it was conducted with 171 mathematics teachers. Among the limitations of the research is that it was conducted only with quantitative data. The study can be conducted by including teachers' feedback through qualitative data collection tools. Based on these limitations, some suggestions can be made for future research. The current study can also be conducted in other provinces with a larger study group and groups of teachers from different branches. This study can be conducted using different designs than the research method used. In addition, with the results obtained from the study, mathematics lessons can be organized with innovative approaches in order to support the knowledge of gifted students regarding mathematics education.

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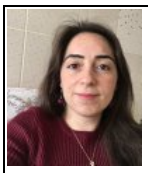

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Review Article

Counseling and supporting the parents of the young entrepreneur[1]

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Abstract

There are many parents of young talented and gifted children or adolescents, who insist on the traditional path of studies both for their sons and their daughters. In many cases these parents had been good students who had completed their educational track successfully which had helped them achieve satisfying professional positions. Such parents tend to believe, that the educational way they had gone through is the only one ensuring the materializing of the children's potential. However, the traditional way is not always better than any other, especially not for young entrepreneurs. According to Shavinina (2009), the entrepreneur "usually learns quickly and often operates in the absence of formal education" (p. 793). Though not perceiving formal education as a condition of being a successful entrepreneur or innovator, Shavinina (2013) "admits" that "there are some exceptions", such as Bill Gates or Jeff Bezos (p. 58). Ferrante (2005) is more traditional in his view. According to him: The most robust empirical finding of this paper is the positive link between entrepreneurial ability and the level of formal education, whereas experience, in contrast with the conventional wisdom, does not seem to play any role (p. 170). In cases parents strongly believe in the "traditional" way, of getting good grades in school, learning in a high prestige university department and working in a well-paid, respectable jobs, they usually insist that their children, especially the gifted, on mathematics and science – including computer science in school, getting high grades, and dedicating a lot of time to school assignments. Gifted children in such families find it quite hard to become young entrepreneurs, as they have to delay any non-formal professional development to a much later than high school stage of their lives. I will hereby demonstrate, through three stories of two boys and one girl, all in their teens, several alternative ways to success. These case studies will show that parents who embrace such ways, support and encourage their children who wish to try a new, challenging way rather than walking the old one, might not only be financially rewarding but also contributing to child-parent relationship

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Introduction

In this work three adolescent entrepreneurs, one girl and two boys, who were 17-18- year old in 2023 will be introduced and described. At the time of writing the girl was 17, still a minor according to the Israeli law; the boys have just turned 18. Though parental permission to publish data about children is required only for minors, I asked and was granted such permission from all parents, as well as from the children involved. Due to length limitation some important details of these adolescents' live will not be presented; I hope that all crucial ones are to be included. Their stories are to start from the point each of them had made her of his first steps towards becoming an entrepreneur; it will go on describing the way each of them had gone through in order to actually become an entrepreneur. But unlike when publishing full case studies (e.g. David & Wu, 2009), I left out some family details, such as parents' age, friends and siblings info, etc. In an enlarged version of this work wall these details will be added (e.g. David, in preparation).

1 This study was presented at 4th International Congress on Gifted Youth and Sustainability og Education (ICGYSE) at 11-12th November, 2023, Antalya (online), Türkiye.

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On the term "entrepreneur"

Here is a confession: I do not like the term "entrepreneur". No, it is not because of its French origin. I even like this language, which was the third language I had chosen to learn in high school. But I feel that by using the term "entrepreneur" we leave out an important part of the process involved in the way an entrepreneur goes through until their work has a financial value. This way starts with a new idea, a new tool, a new concept or a new way of doing things the inventor, or the-person-with-the idea, or the developer of the tool thinks about. Until the final stage of marketing it there is a long way to go. In order to complete the process, the inventor must have high motivation level, "positive" energy to go through all obstacles, persistence, patience, sometimes even stubbornness, until their invention is ready for the market. Even at this almost last stage, in many cases the marketing of a new invention, an innovative idea, or tool, o an upgraded of already existing process is far from being trivial. However, the marketing of the invention is much easier when assisted by others, so the entrepreneur must have good social abilities in order to be able to work in a team. However, the core of the work essential for the entrepreneur is the initial idea.

Gifted entrepreneurship: The state of the art in research

Shavinina (2009) is very explicit in her statement regarding the state of the art of gifted entrepreneurship: "scholars have not yet studied gifted entrepreneurs" (p. 793). Thus, it has not been a surprise that the most detailed case study of entrepreneurs published in the next 5 years after the publication of this statement (as described by Sellers, 2014) dedicated long paragraphs to explaining and defining the term "entrepreneur".

Harper (2014) focused on the financial aspect of entrepreneurship. His examples of the 10 entrepreneurs are money related, but two are exceptional as they opened a new market, the first, Pope Sixtus IV, opened the market of the dead:

> Sixtus gets the nod for realizing that the “wages of sin” meant more than unpleasant repercussions. There was money to be made in damnation, and Sixtus mined it by opening up a new market -- the dead – [...]

The second is Benjamin Siegel, "contributed" massively to the world of gambling:

> Known as “Bugsy” to his friends, Siegel was a notorious mobster with a touch of the visionary. Legend has it that he single-handedly invented Las Vegas, and that’s a stretch.

According to Sellers (2014), "entrepreneurs do more than manage a business and bear risk; they also use capital to make more capital". As can fee from Harper's examples (2004); this might, but not necessarily be true.

Without undermining the financial part of entrepreneurship, I believe that the main focus of the entrepreneurs' work is their *passion*. They have a drive to create, a drive to leave their fingerprint in the world. To do something that will be remembered, that will be always there. Something that is the equivalent of a work of art, a new story, play, a musical piece, or a weapon that might change the world's balance of power resulting either in contributing to peace or to war.

The frame of the work

Many case stories of young entrepreneurs in the field of computers are well known, especially those of the inventors of the greatest inventions of the third millennium that have changed the educational, familial and financial situation of hundreds of millions – if not billions of people. The first in this line of computer entrepreneurs was Bill Gates, the co-founder of Microsoft along with his childhood friend Paul Allen.

> Gates wrote his first software program at the age of 13. In high school he helped form a group of programmers who computerized their school’s payroll system and founded Traf-O-Data, a company that sold traffic-counting systems to local governments ("Bill Gates", 2023).

Another example is that of Mark Zuckerberg, who was born in 1984. Zuckerberg had also started his career in his teens. Zuckerberg is known as the founder of Facebook, at age 19, along with his two Harvard friends: Dustin Moskovitz and Chris Hughes ("Mark Zuckerberg", 2023). He is also known for dropping out of Harvard, a move that in retrospective can be defined as a very clever one.

But Zuckerman did not start his career at Harvard; while still in junior high school, and later, in high school, he created at least 4 major inventions. The first was ZuckNet: at age 11 Zuckerberg thought of connecting all members of his family, as well as his father's dental clinic that was in the basement of the family house. Randi, Mark Zuckerberg's sister defined this invention as: "the first example of when he started building things-and he never stopped." (4 things Mark Zuckerberg created before Facebook, 2014). The second was a Synapse Media Player: at age 16 Zuckerberg wrote "a computer program that used machine learning to determine a user's music listening habits and recommended more music based on the genre, artist, taste, which wasp retty much like what Last.fm does today" (ibid). The next two inventions of mark Zuckerberg were created when he was already 18. CourseMatch, which helped the students at Harvard in choosing and register to the semester courses, and FaceMash, which is said to initiate the beginning of Facebook. It presented the user with two pictures of either male or female students at Harvard and asked them to choose the better looking one.

Many other sources tell about famous entrepreneurs. For example: "5 people who started young and made it big before 30" (2014). But of these case studies only David Karp started while still a teenager:

> He was 17, when the Manhattan teenager decided to move to Tokyo, where he spent the new few weeks fine-tuning his computer skills and toying with the idea of building robots. It was during this period that he decided to become an entrepreneur and started Tumblr, the blogging platform that is known to bring WordPress, Youtube and Twitter together, at 21 from his mom's apartment located in New York (5 people who started young and made it big before 30, 2014).

Of the 10 examples Harper (2004) suggests as "the greatest entrepreneurs", only two started their career during their teens. The first is Thomas Edison, the man "who gave the world the electric light, the phonograph, talking motion pictures and more than 1,300 other patented inventions" (ibid); the other is Henry Ford who left home at age 16 to work in the automobiles industry, after starting being interested in it a few years before (ibid).

The role of the family

Cardella et al. (2020) conducted a quantitative study, using three databases, in which they found 92 articles, published in 1989-2019, in order to identify the main issues in the study of the relationship between family role and entrepreneurship. Here is the summary of them:

> A cluster analysis shows five main areas of literature development: (1) cultural dimension and gender issue; (2) family business and succession; (3) parental role models and entrepreneurial intentions; (4) entrepreneurship and self-employment; (5) family support and women entrepreneurs. Findings also show how this is a relatively recent field of study, with a multidisciplinary character (p. 1).

The Zhu et al. (2017) study examines how family support affects challenges and obstacles of entrepreneurs with exit intentions. However, the minimal age of an entrepreneur in the sample was 19; the oldest was 74, and the average age was 38. Thus, this study, though quantitative, does not contribute to the knowledge about young entrepreneurs.

Though the Suresh & Simon (2023) study is about young entrepreneurs, is its sample is not high school adolescents, and certainly not children who started their first steps as entrepreneurs at about age 12.

Perhaps the most updated document about entrepreneurship is the annual Global Entrepreneurship Monitor (GEM, 2022/23). However, it does not deal with high school age entrepreneurship, let alone gifted adolescents whose way towards entrepreneurship success started when still in junior high school.

Thus, it is my hope that the existing literature, quite meager both in theory and case studies of the first steps of gifted entrepreneurs will benefit from the 3 case studies that are to be presented.

In her monumental work about young entrepreneurs and innovators Shavinina refers to Richard Branson multiple times (e.g. Shavinina, 2006, the whole article; 2009, p. 793; 2013, p. 62). She describes his as "Neglect of academic subjects" (ibid, 2013); she even goes as far as stating that "Gifted entrepreneurs live in their own world of 'real practical' projects; school subjects do not make much sense to them. Many do not do well at school (Branson, 2002; Shavinina, 2013).

The gender aspect, which is one of the main issues of both entrepreneurship and innovation, is not to be discussed here. The gender gap among adult entrepreneurs has been mentioned by many (e.g. Ahl, 2006; Belghiti-Mahut et al., 2016; Blake & Handon, 2005; Chhabra & Karmarkar, 2016; Johansson & Lindberg, 2011; Nahlinder et al., 2012; Orji, 2010 Pablo-Marti et al., 2014; Pinkovetskaia, 2021; Ranga & Etzkowitz, 2010; Robb & Coleman, 2014; Steyn & De Bruin, 2020; Zuraik et al., 2020). However, this subject is beyond the scope of our presentation.

Definition(s) of entrepreneurship and Entrepreneurial giftedness

> A formal definition of an entrepreneur is found in the Merriam Webster Dictionary. The dictionary states that an entrepreneur is "one who organizes, manages, and assumes the risks of a business or enterprise" ("Entrepreneur," n.d.). According to this definition, an entrepreneur is simply an individual who owns a business and bears the risk of that business (Sellers, 2014, p. 6).

In my opinion, the best definition of **Entrepreneurial giftedness** is:

> **Entrepreneurial giftedness** refers to talented individuals who have succeeded in business by creating new ventures (fulfilled entrepreneurial giftedness) with at least a minimal financial reward or who demonstrated an exceptional potential ability to succeed (prospective entrepreneurial giftedness). A gifted entrepreneur is an individual who successfully carries out new business ventures. He or she always starts with an idea and finishes with real products, services, or processes (Shavinina, 2009, p. 793).

There are many more definitions of entrepreneurship. For example: "[...] the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited" (Shane, & Venkataraman, 2000, p. 2018), which requires readiness to implement". Kurniaty et al. (2023, p. 527) embrace this definition, while adding to it: "[...] which requires readiness to implement".

Short description of the common aspect of the three presented case studies

Even when establishing the fact that defining entrepreneurship is at least not easy, we can agree that entrepreneurs are easy to identify (Harper, 2014.). Some of the examples that are the "fruit of an entrepreneur's labor" (ibid) are [...] "Starbuck's coffee, the McDonald's Big Mac®, or an item from the vast selection of the online super-store Amazon.com (Llewellyn & Holt, 2007).

All three case studies share the following in common:

- The entrepreneurs described were all teenagers, but they all started working on their businesses while still in their early teens, around age 12. According to Fraser & Greene (2006), entrepreneurs are usually more optimistic than employees, and optimism decreases with experience. Thus it is understood why the wish to become an entrepreneur is already there while still young; it is the role of parents and education not to put off the light
- They all did not follow the traditional school track, though each of them found their own way of high school education
- Though their parents were different from each other regarding the family support they supplied to their children, all three of them came in terms with the fact that their children did not push themselves as hard as they could for academic achievements while in school.

Learning languages

In my opinion, many gifted children should learn as many languages as possible, whether their passion is entrepreneurship or not. It has been shown in many studies that being bilingual enriches the gifted child; her or his verbal-, as well as the social and emotional development is not harmed by exposure to a second language at a mother tongue level (e.g. David & Gyarmathy, 2023; Peal and Lambert, 1962; Nicolay & Poncelet, 2013; Weissberger et al., 2015; Woumans et al., 2016). The ability to communicate with people from different countries, to live in different cultures, be exposed to a variety of beliefs and living life style is of a great importance to entrepreneurs who need to have as large market as possible, and constantly adjust to new markets. English as a second language is a must, actually, in Israel, my country, good English is a prerequisite to be a part of high technology (e.g. Lee & Schmidgall, 2020) considered

one of the best in the world (e.g. Israel innovation Authority, 2022). When a child or adolescent expresses interest, is able and motivated, it is recommended they should learn German, French, Spanish, Arabic, Chinese, or Russian. Though English is considered the international language, personal connections help in business in general and in marketing one's first inventions, creations and ideas in particular. Such connections are much easier to make maintain when speaking the language of the interested party.

The first case study: Rebecca

Rebecca, who has just turned 17, is already a successful photographer. I had met Rebecca for the first time when she was a 5-year old kindergartner. Her parents thought it was a good idea to seek my advice as she did not seem to be interested in children her age and made no social connections with her peers. Very soon I had realized that Rebecca was well developed emotionally, highly verbal, with many interests, mostly not considered "typical" for her age. She was perceived as a tomboy by her parents and the kindergarten teachers; as has been described in the relevant literature, both loneliness and having "male" characteristics are considered typical for gifted girls and many great women in history (see, for example, Landau, 1999; Ünal & Sak, 2022; Zorman & David, 2000). I met with Rebecca every week and with her parents every other week for a few years, mainly to help them give answers to the intellectual and artistic needs. During these years Rebecca developed her emotional abilities gradually, along with her cognitive performance in very many areas, her wide range of interests, and her artistic talent in music, dancing, sculpturing and painting. The gaps between her and her class peers widened quickly, and soon she was offered to skip a class. But this did not help so much either. Even after her class skipping her parents had to arrange with her teachers to allow her stay at home once a week; later it increased to twice and even thrice a week. But not only did Rebecca find common language with the girls in her class, who were mostly interested in net stars, shopping, etc., she could not relate to the boys either, as they were much more childish than her, even though a year younger...

Rebecca was identified as gifted by the ministry of education at age 8 (about the process of identification for giftedness in Israel see David, 2013, 2014, 2016). As she skipped grade 3 she started participating in the enrichment program for the gifted in her hometown at the beginning of grade 4. However, not only did she not make friends with her class peers, she felt that the gifted children who were a year older than her were not intelligent as she had expected. She told me that "I am used to non-intelligent people; I am also used to disappointments. But these children are so childish...". Rebecca made it through the whole year in the enrichment program; she was exposed to 6 new courses there but none was intriguing as she had hoped, and she had a feeling that the "tasting menu" the program offered did not satisfy her needs. She rather engaged herself with summer intense art classes, learning mathematics with a private tutor, reading everything she could find both in Hebrew and English, and painting, sculpturing and designing cloths for her family members.

Rebecca started her way of becoming a photographer between grade 4 and five – at age 9. She was accepted to a photography class for 10-12-years old; I wrote a recommendation explaining that though she was just 9, she went to school with 10-years old and was emotionally and socially very well adapted. She was the best student in that class; at its end her pictures were chosen as a part of the exhibition the instructor, a well-known photographer, had opened, and as examples of the on-line catalogue a few teachers/photographers shared.

Soon enough Rebecca started being asked to take pictures in family occasions, such as birthdays, Bar- and Bat Mitzvahs, and anniversaries. At this stage Rebecca did not charge retribution yet; she was satisfied with being be appreciated by so many. But when her father got a call from a neighbor who asked if Rebecca could take pictures of his sons' birthday, he said that Rebecca should be paid a certain amount of modest wages. Rebecca was 12 at that time ad that was the beginning of her life as an entrepreneur. For the first two or three years Rebecca's father helped her by answering the phone and setting her appointments for her. He made sure did not go places suspected as unsafe, she was always home before 10pm, and never took more than two jobs per week, except for during school vacations. But when she was 15 she switched to homeschooling, and since then she took control both of her money and her schedule.

Unlike as in many other countries, where homeschooling is quite a well-known practice, and thus an even more common one for the gifted (e.g. Jolly et al., 2013; Conejeros-Solar & Smith, 2021), it is not common in Israel (e.g.

Guterman & Neuman, 2017; Neuman & Guterman, 2016; Pearlman-Avnion & Grayevsky, 2019). Studies about homeschooling for the gifted are practically non-existing in my country, though one of the issues many parents ask me about is the possibility of homeschooling their gifted children. Being homeschooled had caused additional difficulties to Rebecca's parents, but they had supported her through the whole path, and thus made it possible for her to choose an untraditional path, to be a successful artist who had left her fingerprints at such a young age while being a successful business woman.

The second case study: Guy

As many other children born in the third millennium Guy was interested in computers from a very young age: when 5 years old he started playing various computers games. His parents were not very happy about it; though belonging to "second generation users" (see, for example, David, 2022), they believed that "computers prevent the development of social connections". But guy was very well developed emotionally and socially. He had managed to be liked both by teachers and peers, without being perceived as the "teachers' pet" or a "nerd" (e.g. Watts, 2022).

When Guy had his first computers' class in school he was already ahead of all students in his class. Soon enough he started helping the teachers whenever necessary – whether the main computer had connection-, picture-, hardware- or other problems, or one his classmates needed fixing something, finding a file or a program. Within a few weeks Guy became the school "fixer": all teachers got used of asking for his help, and he was happy to oblige.

Guy's "big opportunity" started with the covid-19 pandemic. When learning switched to zoom classes, he had practically no time to participate in his own classes, as he was asked to repair, or fix, or connect students or teachers, or to repair, or find presentations or any other file. The teachers, even those familiar with online teaching, could not take care of many students who were not always concentrated, and many more did not like this new way of learning. Guy was almost always available to fix problems; he was actually happy to practice his skills rather than adapt to the very slow learning pace dictated by his peers.

Little by little Guy started to get phone calls from students of all classes, their parents, siblings, and later their neighbors – everybody was happy with the good natured technician who though still a minor, was very responsible, charged fair and never missed an appointment. When school was resumed Guy could not answer the calls during classes, but during school breaks he returned to all his callers and did his best to make an appointment on that afternoon or early evening.

Guy's parents were not happy when they realized their very talented son preferred his work and did not choose any university courses, or an accelerated school track in math or science, as did many of his less-talented peers. Guy did very well in school, but, as he explained them, the experience he had gained, at such an early stage of his life, was more important to him than any physics or computers course he would be able to take some years later.

When Guy told me his difficulty of convincing his parents that his way was indeed not just legitimate but also recommended, I suggested to meet Guy and his parents for discussing this issue. During this meeting guy was listening carefully to his parents' beliefs, relying on their own experience, as good students who did their best in the traditional track, and as a result had both good professional positions, steady jobs and financial security, while working in their chosen companies. Guy, on the other hand, gave them examples of people who "did it" in non-traditional ways, and promised not to neglect school but rather work in order to achieve a good matriculation certificate, even if not an excellent one. Since then Guy earned his parents support, and he kept on developing his business without being afraid it would harm his relationship with his family, which was very important to him.

When guy was 17 he bought a motor-bike in order to get faster to his clients' houses. He was very proud about it, but it was just the first "investment" he made. During the year between the ages of 17 and 18, when in grade 12, he opened a saving account which was intended for hiring his first office: "Guy's computers repairs".

The third case study: Andrei

Andrei was born in Russia, but immigrated to Israel with his parents before he was 2. As he has no foreign accent in Hebrew and behaves like the "typical sabra", the Israel-born-and-raised Jew (see, for example, Almog, 2000; Ben Zvi, 2000), he finds himself explaining, time and again, the reason for having a Russian name... Guy is bilingual: though his parents speak Hebrew very well, they made sure he not only spoke Russian but also learnt reading and writing Russian before he started school. He communicates with his grandparents in Russian, and is familiar with both cultures equally.

Andrei's opportunity to start his business was at the beginning of the Ukrainian-Russian war. During the first weeks of the war Israel opened its gates to many Ukrainian refugees, mostly women who left Ukraine without their male partners, but in many cases with their young children. These women needed money immediately as they came with no living means, and they could not work in their professions as they knew no Hebrew – many did not know any English either.

Andrei's mother met one of these women at the local grocery store. The woman had difficulties finding some groceries; the shopkeeper did not understand her and Andrei's mother helped her. After a short conversation Andrei's mother offered her a cleaning job. When at the family's home, this woman told Andrei that many friends of hers were also interested in cleaning jobs. Andrei published add with his name and phone number in the local paper, and soon enough got many calls from people who needed help in their household; Andrei matched the family who called to one of the women.

Andrei was not just a mediator, in charge of making business connections: he accompanied each woman to the house for the first time, and took her back to her home at the end of her working day, making sure she was fully paid and nicely treated. He explained the women how to use public transportation, and if either the family or the cleaning lady did not know English, he showed both parties how to use google translator. He demanded the family to offer some food and beverage or, at least, give the cleaning woman a short break for resting, eating and drinking. Guy felt sorry for these women, some were highly educated, who had to clean others' houses rather than work in their more respectfully professions, but he also satisfied for doing something for their welfare.

Andrei's parents supported him right from the beginning. Andrei was tall and strong physically, so they were not afraid of his going to strange households while still only 17. They knew he would do well in school, and were not concerned so much about his future. Maybe their own experience – as immigrants to a new country without connections or property, but their own education and personality – taught them not to worry and let their 17-year old sculpture his own future.

Conclusions and Summary

This work, which summarizes the existing knowledge about gifted school age children who have become entrepreneurs, sheds light on entrepreneurship: a comparatively un-studied area of gifted education. It presents the stories of three gifted adolescent Israelis – two boys and one girl, which is, to the best of my knowledge, the first time that Israeli young entrepreneurs that do not belong to the high-tech community get a public stage. The literature review of the work is quite comprehensive, adding information about high school age entrepreneurs in other places than the US. The meagre literature about young entrepreneurs is even meager about those living in non-western countries; the studies that exist include mostly case studies of over 20-year old (e.g. Basuki et al., 2020). Israeli is considered a western country, but this work, though describing Israeli entrepreneurs, is unique as it is the first of its kind.

In addition:

- The cases described present two different homes of which these entrepreneurs come from: parents who are very supportive, even permissive, and parents who are authoritative (e.g. Dwairy, 2004; Hubbs-Tait et al., 2008; Pilarinos & Solomon, 2016; Uji et al., 2014).
- We are exposed, through the life stories of the three young entrepreneurs, to the lack of school influence on the professional track of gifted children and youths in general and gifted entrepreneurs in particular. This should motivate policy maker to initiate changes in the school curriculum in order to help enhance entrepreneurs – or

at least, not to interfere in their own, independent way they often choose chose in order to materialize their inspirations.

- Opportunity and luck are playing a role in the path of the young gifted entrepreneurs, but not solely. In the cases of Guy and Andrei is was the covid-19 and the Ukrainian-Russian was that accelerated their already fast track as professionals who were also very good with people, in the case of Rebecca she created the opportunity of being known, requested and paid for her work.

Limitations

All case studies share a common limitation: it is impossible to come to any conclusions from reading them. This study is not an exception. But as the literature about non-high-tech gifted adolescents who had become entrepreneurs is so limited, each case study adds something to the existing literature and sheds light on some dark angles, shaded corners of this huge topic.Length limitation has prevented me from offering the reader a full history of each of these youths; a detailed report of their background, as well as that of their families, the schools they had attended and the peers and other friends that had accompanied

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Research Article

The effect of social studies teaching supported by folk songs on gifted students' self-regulation skills and retention of learning[1]

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Abstract

This study was conducted to determine the effect of supporting distance social studies teaching with folk songs on students' self-regulation skills and retention of what was learned. The study group of the research consisted of a total of 35 students, 17 of whom were in the experimental group and 18 of whom were in the control group, who were studying in two different branches of the 4th grade in a private school in Malatya and who received support education in Science and Art Centers (SAC) outside the school. Malatya province, one of the provinces that has been the source of Folk Songs, was preferred because it is the city where the researcher worked as a primary school teacher and researched Folk Songs. This the study, mixed methods of quantitative and qualitative character were used. Experimental design was used with qualitative research method and action research was used with qualitative research method. As a data collection tool, differentiated lesson plans were prepared by selecting folk songs related to the "Culture and Heritage" learning area in the Social Studies teaching program. These lesson plans were applied to the experimental group for 5 weeks. After the lesson topics were taught, the experimental group was administered a 25-question acquisition pre-test compiled from the skill-based 4th grade assessment and evaluation questions, the reliability and validity of which were conducted by the Ministry of National Education of Türkiye (MoNET) and implemented in all schools in the 2020-2021 academic year. In order to determine the retention of what was learned, a post-test application consisting of end-of-the-theme achievement questions was created 21 days after the unit was completely completed. The "7-Step Cycle of Self-Regulated Learning" model was used to measure the self-regulation skills of gifted students and the "Social Cognitive Self-Regulated Learning" model was used to understand the performance of students in the educational process. Paired Simple T test was used for data analysis. As a result of the data analysis, it was determined that supporting distance social studies teaching with folk songs had a positive effect on students' self-regulated learning skills and retention of what they learned.

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Introduction

The most important issue that has been emphasized recently is the development of self-regulation skills of gifted children. Due to the multiple talents of these children, self-regulation skills can be improved through instructional

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differentiation that addresses different ability areas. This study focuses on this issue and investigates the effectiveness of an instructional implementation. It is possible to examine this study, which deals with social sciences education from a different perspective, as it makes learning enjoyable and permanent.

Social Studies Teaching

Social Studies teaching is an interdisciplinary education and training program created for individuals to adopt their cultural values and to gain the idea of transferring these values to future generations by undertaking the task of protecting and protecting them (MEB, 2018). Social Studies teaching aims to shape the upcoming generations with the cultural accumulations of the society in which they live and to ensure the transfer of cultural heritage. Social Studies explores the educational needs of society for the continuity and development of culture in social memories (Çengelci, 2012), strengthens and develops social memory and supports the acquisition of a strong place among world cultures, and Social Studies teaching aims to give students values related to cultural heritage (Özbaş, 2012). While teaching these values, history and geography education is utilized. This is because human life is shaped by the geography in which they live. Geography is the determinant of culture as well as the destiny of human beings. The Social Studies teaching program carries out the task of raising universal human beings equipped with skills and values (Naylor & Diem, 1987, 347). Ethical values such as justice, family, preserving cultural heritage, independence, peace, scientificity, tolerance, respect, love, patriotism, etc. are included in the curriculum. (MEB, 2018). Folk Songs, on the other hand, are oral culture elements that exist with the ethical values of the era and environment in which they are performed and that have emerged as a result of important social events. Folk Songs, which include human life in their subjects, have different themes such as love, respect, cooperation, tolerance, peace, independence and justice (İmik, 2014). The production of folk songs has the aspect of addressing the dynamics of society. For this reason, both folk songs and those who produce them are building blocks that contribute to the cultural heritage of the society in terms of ethical values (Turhan & Kova, 2012).

The Social Studies Curriculum is a curriculum that is quite suitable for cultural heritage education (Özbaş, 2012). Social Studies teaching creates social memory awareness by using many different ways to nurture the continuity of change in cultural heritage education. Levy & Byrd (2011) argue that there are many benefits in teaching social justice issues, including the themes of accepting those different from oneself, opposing discrimination, questioning privilege, and rejecting violence. Social Studies teaching conveys not only local heritage but also universal heritage (world heritage) knowledge to students.

Using Folk Songs as Cultural Heritage in Education

Folk Songs are verbal and auditory products of cultural heritage that remain in the collective mind. In order for these products to survive, they must first be molded in people's memories with words and melodies over time and transmitted to future generations with the continuity of expression. There is a direct proportion between the emergence of folk songs and the advanced level of people's social consciousness (Turan, 1969). Strengthening the consciousness of society, which has been shaped over the years, is possible through the education of the values that society needs to adhere to. Ethical values are included in Social Studies teaching to protect cultural heritage. The values in folk songs and the values in the Social Studies curriculum overlap with each other. The Social Studies Program aims to provide students with the feelings and thoughts necessary to ensure the values (justice, social peace, freedom, protection of cultural assets, love and respect for one's country, scientificity) (Başgöz, 2008). Such values are similar to the values found in folk songs.

For the transmission of folk songs, events that have taken place in the memory are first visualized with actions and then, with the continuous narration of the elements, they take a stronger and stronger place in social memory (Rubin, 1995). Folk Songs are suitable as a rich source and teaching tool that can be used in teaching because they re-present important events to the public in a melodic form by combining them with their own understanding of culture and art through the sieve of emotion and thought (Ataman, 2009). In fact, since they are versatile and social products, it is possible to say that they are also a good teaching tool with their melodies, lyrics, tunes and rhythms (Göher, 2010).

In Social Studies teaching, it is aimed to contribute to the development of students' imagination, emotion and thought system with different strategies that will establish relationships between events while teaching students past

experiences (Otluoğlu, 2002). Planning and implementing the Social Studies Curriculum by supporting it with folk songs may be an effective teaching strategy.

Fuad Koray (1940), in his work " Çocuğa ve Söze Göre Müzik" (Music According to the Child and the Word), argues that the elements that make up the Folk Song form the basis of all other musical works. Folk Songs have a structure that strengthens the unity and sense of belonging of the society in which they exist (Mirzaoğlu, 2019). It emerges by concentrating in times and areas where it is most needed. Sakal (2008) stated that cultural elements are used as a source in historical research. Waller & Edgington (2001) mentioned that supporting history education with music enables students to gain insight into the period they are studying. Palmer & Burroughs (2002) stated that supporting Social Studies teaching with music contributes to social memory about periodic events and increases students' imagination and interest in historical issues. Eady & Wilson (2007) have argued that teaching with music increases the desire to learn, and Cooper (1998) has argued that the use of music in education strengthens students' interest in the lesson and improves their ability to work together. Folk Songs also contain cultural elements that can be used as both a teaching tool and a strategy in Social Studies teaching. Sanchéz (2007) argued that using music in Social Studies teaching is an effective strategy, and White & McCormack (2006) argued that teaching with music in Social Studies increases student interest and learning level.

Giftedness

Giftedness is defined as individuals who learn faster than their peers, are at the forefront in creativity, art and leadership, have superior academic abilities, understand abstract concepts, and prefer to act independently in their fields of interest (MEB, 2019). According to Bilgili and Dalkıran (2004), students with exceptional talents have special academic abilities, exhibit abstract thinking skills, have higher leadership and creativity than others, and learn faster than their peers. Science and Art Centers (BİLSEM) were established for gifted students to benefit from a more effective education opportunity. BİLSEM are support education centers where gifted students are taught in Turkey and where the state provides educational services (MEB, 2013). After receiving education in their schools, students receive educational support in BİLSEM institutions on certain days of the week (MEB, 2013; Doğan & Kesici, 2015; Gürlen, 2021). In the BİLSEM Support Education Program, it is aimed to gain communication, cooperation, group work, learning to learn, problem solving, scientific research, entrepreneurship, critical and creative thinking, effective decision making, technology literacy, social responsibility, and effective use of resources (MEB, 2019). One of the skills that students are expected to acquire in education is self-regulated learning.

Self-Regulated Learning

Self-regulated learning is conceptualized as the ability of students to regulate their own learning processes (Flavell, 1979). According to Kanfer (1970), self-regulation is the process of observing one's own behaviors, self-evaluating oneself, and reinforcing one's own learning with external influences. While Kanfer stated that his model includes various sub-factors, Miller & Brown (1991), who developed a seven-stage self-regulation model based on this model, carried out development studies on the steps of receiving information, self-evaluation, triggering, searching, planning and implementation. Stoeger & Ziegler (2005) created a 7-step cycle for self-regulation. Stoeger (2013) stated that students are able to regulate themselves, their learning and vital needs from the age of nine. Ziegler and Stoeger (2012) argued that an individual should have the ability to evaluate his/her own learning for the quality of learning, but they also mentioned some obstacles that may interfere with learning. According to this approach, the characteristics of the skills that exist in students, students' self-determined goals, the suitability of the characteristics of the learning environment, the support of the tools used for learning and the learning strategy closely affect self-regulation skills (Risemberg & Zimmerman, 1992; Obergriesser et al., 2013; Tortop & Eker, 2014). Zimmerman (1989), who argues that students with self-regulation skills in the educational environment manage and attempt to gain knowledge and skills by relying on themselves apart from teachers, family or other teaching elements, stated that it is important to determine students' self-regulation levels and to create self-regulated learning environments.

Self-Regulation Skills of Gifted Students

The acquisition of self-regulation skills by gifted and talented students is important for academic success and quality of education. It is important for students who are gifted and talented, especially those who are twice exceptional, to develop self-regulation skills in order to demonstrate their potential superiority in a field. Self-regulated learning provides gifted students with a high level of power and motivation to acquire higher level knowledge (Weinstein, 1978; Zimmerman et al., 1996; Ziegler et al., 2013). Giftedness has been conceptualized as those who show exceptional ability or achievement in a particular area and have average ability in other areas. According to Gardner (1993), people can be gifted at an average level in any subject, or they can be gifted at low or high levels. Gifted students exhibit characteristics such as curiosity, strong imagination, broad interests, careful observation skills, high-level thinking, and strong leadership qualities in their field (Çitil & Ataman, 2018). Since the learning speed, comprehension and interpretation abilities of gifted students differ from their peers, it is a need for a gifted child to receive education in line with his/her abilities (Çitil & Ataman, 2018). It is possible to develop the strong talents of gifted students by providing differentiated education in appropriate educational environments with strategies and resources suitable for their learning (Korkut et al., 2017). While providing education to gifted students by taking their potential, interests and abilities into consideration, their enjoyment of this education can also affect the permanence of learning (Clark, 1997; Glass, 2004; Karakuş, 2010).

Importance of the Study

With globalization, borders between societies have disappeared and as a result, cultural interaction between societies with different cultural characteristics has come into question. As a result of this interaction, societies are being driven away from their own cultures and are moving towards a fictionalized global culture. While the rapid change and transformation operations in global culture push people away from their own culture over time, the new world order is being reshaped to raise a single type of person and keep him/her in the position of a consumer. In other words, societies are made to forget their own culture. Due to this situation, folk culture has become much more important in the education programs created by the states in their efforts to shape their future. For this reason, cultural values have been included in the education program and are intended to be taught to students through the Social Studies course. Social studies courses also play an important role in values education. The social studies curriculum aims to raise individuals who are in harmony with the society they live in, protect and develop the basic values that make up Turkish culture and history, bear cultural heritage, show sensitivity to social issues and understand that they are a part of it. Folk Songs, which come from within the society and emerge from experiences, can have the effect that individuals become aware of their own culture and protect their own culture instead of the fictionalized culture formed under the influence of globalization. In addition to understanding the effects of using folk songs in the process of Social Studies teaching in terms of education and training, this study is significant because it serves a profound purpose such as transferring, reminding, teaching folk songs to new generations, keeping Turkish culture in our lives by enriching it, and determining its effect on students' gaining self-regulation skills by becoming aware of the cultural heritage they have and on the permanence of learning.

In this study, which was conducted to determine the effect of distance Social Studies teaching supported by folk songs on the self-regulation skills of gifted students and the retention of learning, answers to the following sub-problems were sought.

- Is remote social studies teaching supported by folk songs effective on gifted students' self-regulation skills?
- Is remote Social Studies teaching supported by folk songs effective on the retention of learning in gifted students?
- Does remote social studies teaching supported by folk songs lead to improvement in gifted students' behaviors towards self-regulation skills?

Method

Research Design

The study, which was conducted to determine the effect of remote Social Studies teaching supported by folk songs on the self-regulation skills of gifted students and the retention of their learning, was conducted in a mixed model in which

quantitative and qualitative research methods were used together. In the research, experimental model, one of the quantitative research models, and action research method, one of the qualitative research designs, were used. In the quantitative research model, the results of cause and effect relationships between variables are investigated experimentally (Kaptan, 1973). The aim of action research is to contribute to an existing situation with new research and to improve the existing situation in different ways (Kaptan, 1973; Büyüköztürk & Karasar, 2014). While collecting research data in action research, the researcher is involved in the research environment, sees the stimuli that may affect the observed action closely, and in this way can obtain more in-depth information by familiarizing with the process (Yıldırım & Şimşek, 2005; Patton, 2014).

A mixed method was used in the research. In addition to using an experimental design with an experimental control group in which pretest-posttest and retention test were applied in the quantitative application, qualitative research method based on observation was also used. In this mixed research method study, 35 primary school 4th grade students were assigned to the experimental and control groups. Retention test and self-regulation skills test were used as data collection tools.

Study Group

The study group of the research is a total of 35 students, 17 in the experimental group and 18 in the control group, who are studying in two separate 4th grade classes in a private school in Malatya. The students included in the study were students who received educational support at Science and Art Centers (BİLSEM) and whose parents' permission was obtained and who volunteered to participate in the study. The distribution of the students participating in the study according to their gender is shown in Table 1.

Table 1. Distribution of the study group according to gender

Groups	Female	Male	Total
Experimental Group	7 (%41,18)	10 (%58,82)	17
Control Group	11 (%61,11)	7 (%38,89)	18
Total	18 (51,43)	17 (48,57)	35

According to Table 1, 58.82% of the 17 students in the experimental group were male and 41.18% were female, while 61.11% of the 18 students in the control group were female and 38.89% were male. Of the total 35 students participating in the study, 51.43% were female and 48.57% were male.

Data Collection Tool

The reliability and validity of the data collection tool in the study was compiled from the questions in the skill-based 4th grade assessment and evaluation fascicles conducted by the Ministry of National Education (MoNE) in 2020. In determining the questions, support was received from 3 Social Studies teachers and 2 classroom teachers who are experts in their fields. The questions, 25 of which were determined for the pre-test and 25 for the post-test, were aimed to be assessment and evaluation questions that completely cover the unit. The same questions were asked to both classes. Differentiated lesson plans were created by supporting the "Culture and Heritage" units in the 4th grade social studies course to be applied during the unit teaching period with folk songs. The differentiated lesson plans to be used during this research period were used in the 4th grade Social Studies course in the 2020-2021 academic year for 5 weeks for the experimental group. During the remote Social Studies unit supported by folk songs, an observation chart created from the "7-Step Cycle of Self-Regulatory Learning" model was applied for gifted students to measure their self-regulation skills (Ziegler et al., 2012). In order to measure the teacher's academic performances in self-regulation processes to understand students' performances, the observation scale created from Zimmerman's (2009) "Social Cognitive Self-Regulated Learning Performance" steps was used.

Collection of Research Data

The Cultural Heritage unit was taught for 5 weeks. In accordance with the curriculum, 3 Social Studies lessons were held every week in the 4th grade. Lesson plans to be used in remote Social Studies teaching related to the Culture and Heritage learning area in the Social Studies Teaching Program were prepared, and appropriate folk songs were carefully

selected for the subjects. Consultancy support was received from music teachers in this regard. These selected folk songs were integrated into the lesson plans and new teaching activities were created. Projects, researches, videos, presentations related to the relevant topics in the distance social studies teaching were made by students under the guidance of teachers. At the end of each lesson, 10-question achievement tests and self-regulation skills questionnaire were applied. A 25-question achievement test was applied for the pre-test and post-test. In order to determine students' self-regulation skills, self-regulation learning observation sheets were kept except for the pre-test and post-test. The answers given to the questions in the observation form, which includes the achievements of the 7-Step Cycle of Self-Regulated Learning that the students would answer themselves, were used to qualitatively measure the students' self-evaluations. In this form, an observation scale created by utilizing the 3-step "Social Cognitive Self-Regulated Learning Performance" steps of Zimmerman (2009) was used. Teachers were asked to evaluate student performances. All steps of the research and the data obtained were provided by distance education.

In addition, the students were asked how they think about the distance social studies teaching supported by folk songs. They were asked to prepare their opinions about the objectives, process and the applied strategy in the form of a presentation. All activities related to self-assessment (narration, prepared videos, writings, statistical information, cartoons, pictures and other tools and the whole process of the unit were shared with peers in the digital classroom environment. These data used for students' self-regulation performance assessment were recorded in observation sheets. Records of all information, documents and activities related to the unit were recorded in digital media.

Data Analysis

Paired Simple T test was used for quantitative analysis of the data. A 25-question acquisition pre-test compiled from 4th grade assessment and evaluation questions was applied. In order to determine the retention of what was learned, a post-test application consisting of end-of-the-theme acquisition questions was created 21 days after the unit was completely finished. It was investigated whether there was a significant difference between the pre-test and post-test scores of the students in the experimental and control groups. "Paired Simple T" test was used to analyze the data obtained. As a result of the analysis, there was no difference between the experimental and control groups according to the results of the self-regulated learning pre-test. The experimental group and the control group students, to whom Social Studies teaching supported by folk songs was applied, were administered a pre-test formed from the (MoNE) 4th grade Learning Outcomes Test. After 21 days, as a result of the post-test application, a significant difference was found between the scores of the experimental group and the control group. According to the results of the post-test for self-regulated learning between both groups, there was a significant difference between the two groups.

For qualitative analyses, two types of student observation sheets were prepared using two different self-regulation models. In these forms, two separate observation forms were used, one for the student and one for the teacher to apply to the student. Both students and teachers were asked to answer these questions about the Culture and Heritage learning domain. One of these forms consists of questions for self-regulation and one for performance. The answer options to the questions were assigned as "Yes and No".

In the analysis of the research data, SPSS statistical data analysis program was used in the experimental design in the section where quantitative method was used. Before the significance analysis of the research data, the normality status of the data set was examined (Table 2).

Table 2. Normality analysis

Groups		N	x̄	Ss.	Skewness	Kurtosis
Experimental Group	Pretest	17	82,941	12,255	-0,467	-0,697
	Posttest	17	96,177	4,517	-1,099	0,769
	Retention	17	96,177	4,517	-1,099	0,769
Control Group	Pretest	18	83,889	12,551	-0,746	-0,315
	Posttest	18	90,278	8,484	-0,991	0,800
	Retention	18	89,722	4,363	0,713	0,197

According to Table 2, which includes the skewness and kurtosis analysis conducted to determine the normality of the data set, skewness and kurtosis values vary between -1.099 and 0.800. Skewness and kurtosis values between -1.5 and 1.5 indicate that the research data are normally distributed (Tabachnick & Fidell, 2013). Due to the normal distribution of the research data, the t test, which is one of the parametric tests, was used in the significance analysis. In order to determine the prior knowledge levels of the students of both groups, a "Pre-Test" was administered before the course topics were covered. At the beginning of the unit, a self-regulation pre-test and at the end of the unit, a measurement and evaluation test from the MEB New Generation Social Studies achievement questions were applied. A post-test was administered at the end of the unit to determine whether the subtopics covered in the teaching of Culture and Heritage learning area were learned. "Retention Test" was applied to the experimental and control groups in order to determine the level of recall of the subjects supported by folk songs. The security validity of the Retention Test is approved by the Ministry of National Education. The questions in these tests were prepared by selecting from the achievement tests applied in all schools in 2020.

Findings

The pre-test and post-test findings of the experimental and control groups of the students participating in this study, which was conducted to determine the effect of distance Social Studies teaching supported by folk songs on the self-regulation skills of gifted students and the retention of their learning, are given in the tables below.

The results of the pre-test and post-test analyses on the effect of distance social studies teaching on the self-regulation skills of gifted students are shown in Table 3 and Table 4 below.

Table 3. Pre-test analysis of gifted students' self-regulation skills

Groups	N	x̄	Ss.	t	p
Experimental Group	17	82,941	12,255	-0,179	0,806
Control Group	18	83,823	12,934		

p<.05

According to the data in Table 3, there is no significant difference in the pre-test scores of self-regulation skills in science learning of gifted students in the experimental and control groups (p>0.05). The arithmetic mean of the pre-test scores of the experimental group (x̄=82.941) was lower than the control group (x̄= 83.823). This can be interpreted as that the experimental and control group students had similar characteristics in terms of self-regulation skills in learning science before the application.

Table 4. Post-test analysis of gifted students' self-regulation skills

Groups	N	x̄	Ss.	t	p
Experimental Group	17	96,177	4,517	2,064	0,056
Control Group	18	90,588	8,639		

p<.05

When Table 4 is examined, there is no significant difference in the post-test scores of the experimental group and control group students' self-regulation skills in science learning (p<0.05). The arithmetic mean of the post-test scores of the experimental group's self-regulation skills (x̄=96,177) was higher than that of the control group (x̄=90,585) in contrast to the pre-test data. This can be interpreted as an increase in the self-regulation skills of the experimental and control group students in learning science after the application.

The post-test analysis results for the retention of learning in distance Social Studies teaching supported by folk songs are presented in Table 5.

Table 5. Pre-test analysis of learning retention in gifted students

Groups	N	x̄	SS	t	p
Experimental Group	17	96,177	4,517	3,917	0,001
Control Group	18	90,000	4,330		

p<.05

When Table 5 is examined, a significant difference is seen in the post-test scores of the experimental group and the control group ($p<0.05$). The arithmetic mean of the post-test scores of the experimental group regarding the retention of learning ($\bar{x}$=96,177) is higher than the control group ($\bar{x}$=90,000). This can be interpreted as an increase in the retention of learning of the experimental and control group students after the application.

Table 6. Observation data on the 7-step cycle of self-regulated learning

	Opinions	Yes	No	Total
Experimental Group	I can set my own goals.	16	1	17
	I can make my plans according to the time.	13	4	17
	I can plan how I will learn.	15	2	17
	I can implement the plan I made.	12	5	17
	I can check the results of my plan.	14	3	17
	I can explain the results of my product.	16	1	17
	I can evaluate myself.	15	2	17
Control Group	I can set my own goals.	13	4	18
	I can make my plans according to the time.	10	7	18
	I can plan how I will learn.	13	5	18
	I can implement the plan I made.	10	7	18
	I can check the results of my plan.	10	7	18
	I can explain the results of my product.	13	5	18
	I can evaluate myself.	15	3	18

Table 6 shows the results of students' self-assessment of their self-regulated learning skills. According to the table, it is seen that the experimental group gained the skills of setting goals and explaining the results of the product. In the control group, although they acquired the skills of setting their own goals and explaining the results of the product, they did not perform as well as the students in the experimental group. Social Cognitive Self-Regulated Learning Performance Observation data are presented in Table 7.

Table 7. Social cognitive self-regulated learning performance observation

	Opinions	Yes	No	Total
Experimental Group	To be able to use self-regulation skills for foresight	12	5	17
	Use self-regulation skills for performance	15	2	17
	Use self-regulation skills for self-reflection	13	4	17
Control Group	To be able to use self-regulation skills for foresight	12	5	18
	Use self-regulation skills for performance	10	8	18
	Use self-regulation skills for self-reflection	11	7	18

Table 7 shows the teacher's evaluation data on students' self-regulated learning performances. When the data in the table are examined, it is seen that the skills for self-regulated performance were realized at a higher level in the experimental group compared to the control group.

Procedure

The Culture and Heritage learning area in primary school 4th grade Social Studies teaching supported by folk songs was implemented with distance education for a total of 15 hours, 3 hours per week.

The time and achievement schedule for the implementation of the Culture and Heritage learning area is presented in Table 8.

Table 8. The learning outcomes in the Social Studies Culture and Heritage

Achievments	Week	Date	Total
SS.4.2.1. Students will be able to study family history by using oral, written, visual sources and objects.	Week 1	07 -12 December 2020	40+40+40 (3 classes)
SS.4.2.2. Students give examples by researching the elements reflecting the national culture in their family and environment.	Week 2	14-20 December 2020	40+40+40 (3 classes)
SS.4.2.3. Students compare traditional children's games with today's games in terms of change and continuity.	Week 3	23 -28 December 2020	40+40+40 (3 classes)
SS.4.2.4. Students comprehend the importance of the National Struggle based on the lives of the heroes of the National Struggle (Acquisition is handled in the context of biography teaching)	Week 4	1-5 January 2021	40+40+40 (3 classes)
Self-Assessment, Performance Self-Assessment, Observation, post-test and achievement test	Week 5	8-13 January 2021	40+40+40 (3 classes)
Source: Social Sciences Teaching Curriculum, 2018	Total: 5 Weeks	15 Class Hours	

It is of great importance to plan the first lesson accordingly in order to make the students intuit the concepts in the Culture and Heritage learning area in the first lesson hour. Among the concepts, the concepts of "UNESCO, Culture, Heritage, Folk Songs and Abstract, Tangible Cultural Elements" were primarily introduced to the students. A student was asked to explain the dictionary meaning of the concept of Culture and Heritage. According to the Turkish Language Institution (2005) culture: It is defined as "*all material and immaterial values created in the process of historical and social development, and the whole of the means used in creating and transmitting them to the next generations, showing the measure of man's sovereignty over his natural and social environment*". For the concept of heritage, it is defined as *"what a generation leaves to the next generation, inheritance"*. A short informative movie related to the learning area of Culture and Heritage was shown and an introduction to the subject was provided.

In order to draw attention and familiarize students with the topics, they were asked to ask each other questions about Folk Songs, one of the elements of Culture and Heritage.

- *Do you listen to folk songs?*
- *What kind of folk songs do you like and listen to?*
- *Is there anyone in your family who likes and listens to folk songs?*
- *Does anyone in your family work with folk songs and earn money?*
- *Do you know any folk song stories?*

After collecting the necessary information on this subject, attention was drawn to the dates of the emergence of these folk songs. After checking that the dates were old, a question was asked again.

- *"These folk songs have not been forgotten and how have they come this far? Have you ever thought about it?"* and brief information about preservation and transmission was given. *"Preservation: Defining an item first, documenting what it is, what it does, when it emerged, preserving, developing, strengthening, transferring it from generation to generation through formal and non-formal education"* TDK (2005).

It was asked again what is meant by "protecting" our culture and heritage.

- With the question *"What do we need to do as students or citizens?"* the students were asked to repeat the information they had been taught. After explaining that the task of protection would not be a task belonging to only one nation, the UNESCO organization was mentioned.

The United Nations Educational, Scientific and Cultural Organization (UNESCO), which was formed by the coming together of many nations, signed a convention with countries to protect Cultural Heritage on October 17, 2003. Turkey became one of the countries that signed this agreement in 2006. Protecting them and teaching them to the new generation is a subject of Social Studies teaching. Students were given time to watch and comment on the video about folk songs being elements of our Cultural Heritage.

Photo 1. Cultural heritage of folk songs[4]

In distance social studies teaching, students quickly accessed the information they needed in many areas by using web networks. This situation especially supported the enrichment of the learning process at the knowledge level. Especially with easy access to folk songs, it made the subjects covered interesting and fun. Students were motivated to engage in extensive research on family structure, place of birth and place of residence.

Photo 2. Research the culture and heritage elements of the places where we were born[5]

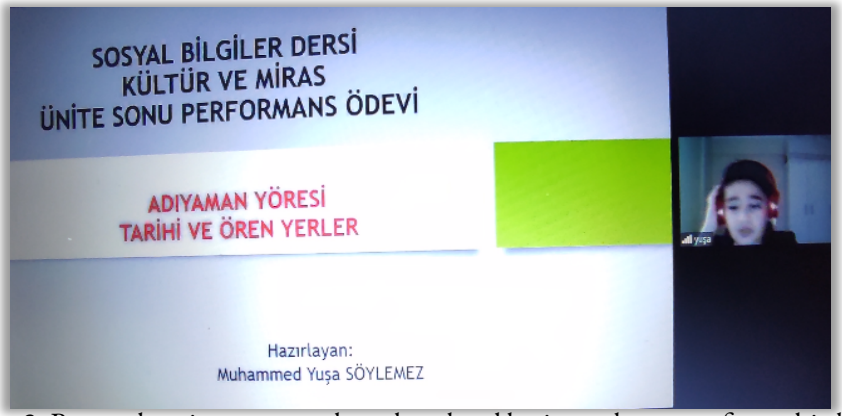

Photo 3. Research assignment on the cultural and heritage elements of your birthplace

[4] Research assignment in self-regulated learning for gifted students
[5] Example of performance assignment in self-regulated learning for gifted students

After the conceptual study in the learning area of Culture and Heritage supported by Folk Songs using self-regulated learning steps, a short evaluation study was conducted with the students. (10-question MoNE attainment test.) The lesson activities in which each student's lesson participation and activity areas were observed were recorded, and the attainment tests, research assignments, lesson participation, speaking and contributing activities, and self-regulated activities were carried out together.

The fact that the students were asked to set their own goals and take notes, as well as to do research on topics of their own choice, created an interesting teaching period that strengthened their desire for free research. As in every study conducted with students with different attention and perception spans, an individual curriculum was prepared for the students in this study, and the subjects were taught with various and different lesson activities prepared by the students. Each student fulfilled his/her duties and responsibilities according to his/her abilities in the lessons taught with an active student profile. At the beginning of each lesson, the students made a short presentation about the subject they researched, which helped them to repeat what they had learned. With the Social Studies teaching supported by folk songs according to individual needs and existing conditions, students were frequently involved in activities such as setting goals, planning, implementing planning, reviewing the missing parts and re-studying. The teacher's active marking of the lesson observation sheets from the beginning to the end of the teaching was effective in identifying students who showed progress or who did not. In addition, not only the teacher but also the students were given the opportunity and time to evaluate themselves. In order to develop self-efficacy, self-confidence and self-evaluation skills in self-regulated learning processes, each student was made to feel that he/she was the captain of his/her own ship. Another name for self-regulated learning is that the student himself/herself is in charge of his/her own learning processes. In this research, the student was made to be an apprentice captain.

Conclusion and Discussion

In the study, the effect of supporting distance social studies teaching with folk songs on gifted students' self-regulation skills and students' retention was investigated. Folk Songs are the product of human experiences and human relations. Social Studies teaching, on the other hand, is designed as a curriculum with features that can carry the success, desire, interest and skills of students to the next level while examining both human beings and human relations (Bölücek, 2008; Hailat et al., 2008). It is a program designed to enable students to recognize, understand and protect the elements that make up the assets of the culture in which they live. In line with the findings of this study, some studies (White & McCormack, 2006; Sanchéz, 2007; Moore, 2007) have also found that supporting Social Studies teaching with folk songs strengthens students' potential to remember what they have learned and improves their self-regulation skills.

Simply being gifted is not enough for a gifted student to become an expert in a field (Zimmerman, 2006). The fact that the focus of the study is on gifted students is closely related to the need for these students to use strategies that can improve their abilities. During the research, the experimental group students were asked to evaluate both the process and themselves within the scope of self-regulated learning skills. Evaluating the learning processes and analyzing the results and rethinking them in order to filter them through consciousness can make what is learned permanent (Weinstein et al., 2000). It can be considered that the fact that the experimental group students repeated what they learned at certain intervals, participated actively in the researches, and created their own road maps in teaching positively affected the retention of the subjects covered. In the research implementation process, it is thought that the students' repeating what they learned during the transfer while transferring what they learned to their peers also helped them to memorize what they learned. Students were asked to make use of family, internet, books, magazines and other resources when needed and to identify appropriate places to consult when determining the factors affecting the teaching process. The strategy of getting help is an important step in self-regulated learning. It is important to apply this way so that students do not get stalled. This request can be considered as an acquisition study that increases their resistance to the problems they face. Students were asked to come up with solutions to minimize learning barriers.

In educational processes, some situations in which being gifted takes precedence over being a child cause students to become emotionally exhausted at an early stage. Expecting gifted students to be perfect and directing them to education beyond their interests and aspirations puts an extra burden on them. However, being gifted or even being twice gifted creates situations that are not in favor of some students but against them. It is the duty of educators to differentiate and enrich teaching in order to provide them with education in line with their differences, and to ensure that they receive education in happy and comfortable environments. During this study, it was observed that gifted students were comfortable in Social Studies teaching supported by folk songs, they were happy with the teaching processes and they contributed to the educational processes with their own will.

Recommendations

In Social Studies teaching supported by folk songs, it is important to select subject-specific folk songs. Since not every folk song can be a teaching tool, the selected folk song should be suitable for the objectives, achievements and skills to be acquired in terms of its suitability for the Social Studies curriculum. Folk Songs should give the student a vision, a philosophy about life and an enlightenment about music. In education, although it is not the teacher's primary duty to teach students by having fun, it can be thought that the students' happiness with the teaching supported by folk songs increases the student's interest and desire for the lesson in self-regulated learning. It is thought that integrating folk songs into lesson plans and preparing them in advance will make education more quality. All of the strategies to be applied to students about time management in self-regulation skills should be planned together by both the student and the teacher. The primary gain of planning the educational processes in the courses is to provide students with good time management skills. In distance education, the preparation of tools, equipment and materials for the subject in advance by teachers and students in the environments where students will receive education should be seen as an important issue in terms of the quality of learning processes. In order to provide the necessary cognitive awareness about self-regulation skills, it may be useful for the Ministry of National Education to include more self-regulated learning in the curriculum in order to provide a quality education service.

The fact that teachers who will teach Social Studies with Folk Songs have an awareness beyond being familiar with Folk Songs is closely related to the teacher's recognition of his/her own national cultural elements. Teachers who do not recognize folk songs, do not know the environment and historical processes in which they emerged, and do not understand the depth of folk songs run the risk of being one of the links that break the transfer in cultural transfer. This situation may constitute an important problem in the creation of a cultural pool to make the cultural values of a nation strong. For this reason, in the transfer of culture, teachers should be aware of the subtle philosophy of folk songs, the reasons for the origin of folk songs, and the relationships between the events that make a folk song a folk song. In order to increase the number of teachers who can use folk songs in lesson activities in other lessons besides Social Studies teaching, free in-service training support can be provided without burdening teachers.

Studies can be conducted on how the utilization of folk songs in education and training can make education higher quality. With the studies to be conducted with folk songs, their contribution to students' problem solving, gaining ethical values, developing their feelings of strength, flexibility and resilience in character education, and providing motivation in learning can be investigated. Ziegler et al. (2013) prepared a program on how to develop self-regulated learning in mathematics. Research on programs to develop self-regulated learning in Social Studies teaching can contribute to the field. If such studies are conducted not only for one course but for all courses, they can support gifted students to develop their abilities better.

As long as gifted students develop their self-regulation skills, they will be able to carry their existing talents to an advanced level. Otherwise, gifted students' talents may be forgotten and their existing talents in terms of both intelligence and ability may atrophy. These students may be disconnected from the education process. However, the gifted children of a country represent the bright future of that country. Investing in the future of a country means preparing its unique and sought-after brain power for the future. Raising students with self-regulated learning skills that can develop their giftedness can pave the way for these students to specialize in the fields they need.

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Research Article

Scenario-based teaching in teaching algebra in gifted education[1]

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Abstract

The purpose of this research is to investigate the effect of the scenario-based learning method in 6th and 7th grade Algebra teaching on the success of gifted and nongifted students in skill-based questions and their opinions about teaching. It is thought that learning with scenarios in the field of algebra will increase students' self-confidence in mathematics lessons and will help break down the prejudice they may have against skill-based questions. This research was conducted with seven gifted students and 58 non-gifted students. The model of the research is a mixed method in which qualitative and quantitative data are used together. According to the findings obtained from the research, there was a significant difference in favor of the posttest of the experimental group nongifted students in the course taught with the scenario-based learning method in algebra teaching, there was no significant difference in the pretest and posttest results in the control group taught by applying current teaching methods, and the results of the experimental and control groups were significantly different. It was observed that the posttest averages differed significantly in favor of the experimental group, while there was an increase in the total scores and achievement-based scores of gifted students in favor of the posttest. When the opinions of the experimental group students were examined, it was revealed that they were more effective in the lessons taught using scenario-based learning methods, they achieved permanent learning, their anxiety decreased compared to the current teaching, and they stated that they had fun.

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Introduction

The education system aims to raise people with integrated knowledge, skills and behaviours. The individual is expected to know his own learning needs, be aware of the learning process, be able to use previous learning in daily life and continue his development throughout life. Mathematics education has a long history and importance. Maths takes old information into consideration, justifies it with new information, and makes use of verified knowledge and skills (Moralı, Uğurel, Türnüklü, & Yeşildere, 2006). The frequent presence of algebra in the world of mathematics reveals the importance of individuals learning algebra (Williams & Molina, 1998). Algebra; It is a unit in a language and mathematics course (Dede and Argün, 2003). Algebra learning area first appears in the 6th grade of secondary school. This area of learning continues in the 7th grade, and algebra is given more attention in the 8th grade, which is the last stage of secondary school (MoNE, 2017).

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In order to develop mathematical disposition in students, well-planned teaching content should be provided, positive beliefs about problem solving should be created in students and their abilities should be developed accordingly (Altun, 2006, p. 226). In order to increase the quality of mathematics teaching and to provide a fun and effective learning environment, different learning methods are needed, unlike conventional learning methods. The modern understanding of education directs individuals towards "learning to learn" activities rather than giving information directly to individuals (Geçer and Özel, 2012). The movement of education and training away from traditional understanding and towards contemporary understanding ensures that students learn the rules and concepts of mathematics teaching in a more permanent way, more useful in daily life, and in a meaningful way, as opposed to a rote memorization approach. The methods and techniques in the contemporary education system, where student-centered practices exist, should also be used in mathematics teaching where students have difficulty. Scenario-based learning is one of the methods that aims to increase the permanence and quality of teaching, but also where the student feels more effective and finds fun in this process.

With the scenario-based learning approach, the individual transforms thought into behaviour and makes learning concrete. Scenario-based learning guides students through a scenario and enables them to make their own decisions about situations and problems. It has been observed that students express their thoughts more easily and their participation in the course increases in courses taught with a scenario -based learning approach (Süğümlü, 2009). The most important reason for this is the opportunities given to students in the chain of scenarios created by events that are associated with daily life and can be experienced through scenarios. Scenario-based learning should be used in algebra acquisitions that students have difficulty in making sense of due to its abstract structure and unique language, which they encounter at all levels of secondary school.

The scenario-based learning method will be effective on nongifted students, as well as gifted students who are studying at the Science and Art Center. Because gifted students have the potential to improve themselves and change the perspective of society. These individuals have common characteristics such as the ability to produce different solutions to problems, their sensitivity to many areas of interest, their strong memory, their high ability to focus, their rich vocabulary, their ability to distinguish similarities and differences, and their ability to establish connections between situations (Çağlar, 2004). For this reason, considering the creativity and problem-solving skills of gifted students, the effect of the scenario-based learning method in teaching algebra on gifted students as well as nongifted students, emerges as a problem situation.

Along with the education system, measurement and evaluation methods have also changed, and skill-based questions have gained importance with the High School Entrance Examination (HSEE). It is known that more than one question arises from the field of algebra learning in HSEE every year. It is very easy to forget abstract achievements such as algebra, which are not repeated by the student and not used in daily life. Studies have shown that students have difficulty in understanding variables, which are the most basic structural unit of algebra, and that students think that letters are only used to express words briefly (Kieran, 1992). Akıncı (2012) stated that the equal sign is a mathematical symbol that is used only when finalizing operations in the students' perception world. The fact that algebra is one of the most problematic learning areas in mathematics has led educators and researchers to look for more efficient methods in teaching algebra. Scenario-based teaching is one of the teaching methods that can meet this need. The use of this method is important in that it allows students to make connections with real-life problems in algebra. Laying a solid foundation in Algebra in the 6th and 7th grades will benefit students in the HSEE exam they will take in the 8th grade. Moreover, considering that algebra is a learning field that contains abstract information and is not encountered much in daily life, the use of scenario-based learning method is more important. It is thought that the student's learning of algebra through experience will increase his/her self-confidence in mathematics class. With this study, teachers can examine the use of the scenario-based learning method in teaching algebra, which has its own language and structure, and gets an idea about its use in other difficult and abstract mathematics subjects. Thus, it is thought that scenarios, which have an important effect in teaching, will benefit the field of algebra learning by going beyond teaching lessons with rules and concepts. Therefore, it is thought that the use of scenario-based learning method in teaching algebra in the secondary school

mathematics curriculum will increase success in skill-based questions by enabling students to change their perspective on real-life problems.

When looking at the literature, it can be seen that course success and permanence in learning (Cornely, 1998; Sorin, 2014; Pektezel, 2017; Karcı, 2018; Aslan, 2019) are examined in studies on the scenario-based learning method. However, there are also studies (Flynn & Klein, 2001; Çakır, 2017; Taneri, 2018) that include students' opinions about the teaching method. When we look at the studies on the scenario-based learning method, it is seen that its relationship with many disciplines has been examined (Yaman and Süğümlü, 2009; Kocadağ, 2010; Bakaç, 2014; Tupe, 2015; Kemiksiz, 2016; Temur and Turan, 2018; Tol, 2018). It has been observed that there are not enough studies that include gifted students and the field of algebra learning. As a result of the study, it is expected that teaching will become more concrete and understandable by showing the different and entertaining sides of mathematics with the scenario-based learning method. In addition, moving beyond abstract and monotonous expressions in mathematics teaching is important in terms of creating different learning environments that will increase students' interest in the course, offering sample activities and giving ideas to teachers.

The purpose of this research is to investigate the effect of the scenario-based learning method in 6th and 7th grade Algebra teaching on the success of gifted and nongifted students in skill-based questions and their opinions about teaching. Based on the stated purpose, the following problems and sub-problems were examined:

Does the scenario-based learning method in teaching algebra have an effect on the success of gifted and nongifted students in skill-based questions and what are the student opinions about teaching? Subproblems are;

- Is there a significant difference between the pretest scores of the experimental and control group nongifted students?
- Is there a significant difference between the pretest and posttest scores of the experimental group nongifted students?
- Is there a significant difference between the pretest and posttest scores of control group nongifted students??
- Is there a significant difference between the posttest scores of the experimental and control group nongifted students?
- Is there a significant difference between the pretest and posttest scores of gifted students?
- What are the opinions of gifted students about the scenario-based learning method in teaching algebra?
- What are the opinions of nongifted students about the scenario-based learning method in teaching algebra?

Method

Research Design

The model of the research is a mixed method research in which qualitative and quantitative data are handled together, as it aims to examine the effect of the scenario-based learning method in algebra teaching on the success of gifted and nongifted students in skill-based questions and their opinions about teaching. Mixed method research is when the researcher combines qualitative and quantitative method approaches and concepts (Johnson and Onwuegbuzie, 2004). Among mixed method studies, explanatory design was used. In the explanatory design, firstly the quantitative data and then the qualitative data are obtained. Qualitative data are used to support quantitative data and detail emerging situations (Yıldırım and Şimşek, 2018).

The qualitative dimension of the research was carried out in the same way for the experimental group of gifted and nongifted students, and opinions about the application were received from the students in the experimental group. In this study, a case study was used because it was intended to examine the algebra achievement taught by applying the scenario-based learning approach, the students' algebra success in skill-based questions, and the impression this learning approach left on the students. Case study is an approach that allows systematic information to be collected and examined in detail about the research (Chmiliar, 2010).

Study Group

The research was conducted in the first semester of the 2022-2023 academic year with 6th and 7th grade students at a Boarding Secondary School and Science and Art Centre in the Central district of Kars province. The population of the research consists of all secondary school 6th and 7th grade students in the Central district of Kars province, while the sample consists of 6th grade (N = 33) and 7th grade (N = 32) students in the Regional Boarding Secondary School and Science and Art Center in this district, where the application was carried out.

The reason why 6th and 7th grade students were selected in this research is that the curriculum of these grade levels includes intensive learning algebra and these achievements are suitable for expressing with scenarios. Algebra learnings are heavily included in the 8th grade, but since the learnings are too abstract and complex, they are not suitable for script writing. Appropriate sampling method was used because the researcher worked at Regional Boarding Secondary School, one of the application schools, and participation in the research was voluntary. This method is a method that the researcher creates by starting from the group that is easiest to reach in order to avoid loss of labour and time (Büyüköztürk et al ., 2016). Due to the association of the study with the scenario and its connection with creativity, it was desired to examine the effect of the study on gifted students, and criterion sampling, one of the purposeful sampling methods, was used when selecting the other application school, the Science and Art Centre. In criterion sampling, the sample is created from individuals, events or situations with specified qualifications (Büyüköztürk et al ., 2016). The quantitative dimension of the research was carried out in two different ways in two schools. The first school where the application took place is a public school with nongifted students and therefore, sufficient numbers for the control and experimental groups were reached. Since there was no significant difference in the pretest result, one of the two classes was determined by lottery as the experimental group and the other as the control group. Since the second school where the application was carried out was at the Science and Art Center affiliated with the Ministry of National Education, where gifted students were located, only the experimental group was formed because the sufficient number of students could not be reached.

Data Collection Tool

To obtain the quantitative data in the research, a pretest and a posttest for 6th and 7th Grade Algebra Achievement, which included skill-based questions consisting of algebra achievements, were created. The test consists of 15 questions for the 6th grade level and 20 questions for the 7th grade level. The number of questions varies depending on students' grade level and exposure to skill-based questions. The distribution of the achievements in the skill-based questions was taken into consideration and all the achievements processed with the scenario were included.

The table below shows the distribution of the items in the pretest and posttest according to achievement.

M.6.2.1.1. Writes an algebraic expression appropriate to a verbally given situation and a verbal situation appropriate to a given algebraic expression.

M.6.2.1.2. It calculates the value of the algebraic expression for different natural number values that the variable will take.

M.6.2.1.3. Explains the meaning of simple algebraic expressions.

Table 1. Distribution of 6th grade algebra subject pretest and posttest question items according to gains

Achievements	Related question items	% Total Achievment
M.6.2.1.1.	1,3,12,13,14	33.3%
M.6.2.1.2.	7,8,9,11,15	33.3%
M.6.2.1.3.	2,4,5,6,10	33.3%
Total	15	%100

M.7.2.1.1. Performs addition and subtraction operations with algebraic expressions.

M.7.2.1.2. Multiplies an algebraic expression by a natural number.

M.7.2.2.1. Understands the principle of conservation of equality.

Table 2. Distribution of 7th grade algebra subject pretest and posttest question items according to gains

Achievements	Related question items	% Total Achievment
M.7.2.1.1.	4,5,7,10,15,16,17	35%
M.7.2.1.2.	1,2,9,11,14,20	30%
M.7.2.2.1.	3,6,8,12,13,18,19	35%
Total	20	%100

All of the questions in the test were prepared from the questions published on the official website of the General Directorate of Measurement, Evaluation and Examination Services of the Ministry of National Education and in the

study fascicles of the Measurement and Evaluation Centers of the provinces affiliated to the Ministry of National Education, in order to ensure validity and reliability. While creating the test, it was determined by paying attention to the number and equal distribution of the achievments, and no items were removed from the first prepared test. After the Algebra Achievement tests were prepared, two academicians and two mathematics teachers were consulted and their opinions were obtained. In order to give the necessary time to the questions in the test and to detect any unclear situations, thirty-two 8th grade students were selected for the 7th grade Algebra Achievement test pilot application and twenty-eight 7th grade students were selected for the 6th grade Algebra Achievement test pilot application. After the pilot application, the time was determined as 30 minutes for 6th grades and 45 minutes for 7th grades.

Qualitative data were obtained from the semi-structured Opinion Form created regarding the scenario-based learning approach of the students in the experimental group. The opinion form, which aims to examine student opinions about the scenario-based learning method applied to the experimental group, was developed by Karasu (2019) and the questions in the interview form were adapted by the researcher according to the Algebra learning field and took its final form. The interview form is in the form of a semi-structured form. Semi-structured interviews offer participants the opportunity to express themselves and gain in-depth information about the subject (Büyüköztürk et al ., 2016, p.154). The students in the experimental group were asked questions about the algebra subject being taught with the scenario-based learning method and how effective this method was on skill-based questions, and their opinions were received. The data obtained were collected into 3 themes: Attitude, Opinion and Anxiety. The questions that make up the interview form regarding the scenario-based learning method are grouped under these 3 themes.

Data Analysis

While there are 15 questions in the pretest and posttest at the 6th grade level, there are twenty questions at the 7th grade level. The questions in the achievement test were prepared as multiple choice at both grade levels. "1" point was given for the correct answer, and "0" point was given for the wrong and blank answers. During data analysis, the scores received by students were converted to a 100-point system due to the difference in the number of questions at grade levels. A student who answers all questions correctly receives 100 points, and a student who answers all questions incorrectly receives 0 point.

In the analysis of the data obtained in this research, which examined the effect of the scenario-based learning method in teaching algebra on students' success in skill-based questions, the normality of the data was first examined. Median and arithmetic mean values, Kolmogorov-Smirnov and Shapiro Wilk tests, QQ plots and box plots were examined for normality in the pretest and posttest of nongifted students. Since the study group was below 50 people, the Shapiro Wilk test was taken into account in the analysis of the data. It was determined that the data were not normally distributed. The results of normality tests are given in Table 3.

Table 3. Normality test results

Class	Test	Group	Kolmogorov-Smirnov			Shapiro-Wilk		
			Statistics	SD	p	Statistics	SD	p
6th grade	Pretest	Control	.237	15	.023	.881	15	.049
		Experiment	.251	15	.012	.878	15	.045
	Posttest	Control	.205	15	.091	.889	15	.044
		Experiment	.190	15	.151	.893	15	.075
7th grade	Pretest	Control	.210	14	.094	.916	14	.194
		Experiment	.201	14	.128	.857	14	.027
	Posttest	Control	.244	14	.024	.811	14	.007
		Experiment	.143	14	.200	.955	14	.634

In the analysis of the data of nongifted students, the Mann Whitney U test was used to compare the scores of two non-parametric tests, and the Wilcoxon test was used to compare the scores of two groups from a single group. Due to the current number of gifted students, the total success scores of the pretest and posttest were interpreted according to development and regression.

Content analysis was used to analyze the qualitative data obtained through the opinion form applied to examine the opinions of all experimental group students about the application. In the content analysis method, the researcher created codes and thematic categories according to the answers given to the questions and made them meaningful by determining the frequencies. Thus, the data examined were dug deeper, and the data were conceptualized and interpreted without deviating from the purpose (Yıldırım and Şimşek, 2018).

Findings

In this part of the research, the findings and comments of the pretest and posttest, which are the achievement tests applied to the experimental and control groups in order to measure the success of the students on skill-based questions of the scenario-based learning method in teaching algebra, are included. In addition, the findings and comments that were analyzed qualitatively and included the opinions of the experimental group are also included in this section.

Findings for Sub-Problem 1

The data of the question "Is there a significant difference between the skill-based achievement test pretest scores of the experimental and control group students of the algebra course taught with the scenario-based learning method for 6th grade grade nongifted students?" were analyzed with the Mann Whitney U test because they did not show a normal distribution and the analysis results are given in Table 4.

Table 4. Difference between pretest achievement scores of 6th grade experimental and control groups nongifted students

	Group	**N**	**Hydrangea**	**Rank Avg.**	**Rank Total**	**U**	**Z.**	**p**
Achievement test	Control	15	26.64	16.47	247.00	98.00	-.624	.533
	Experiment	15	19.98	14.53	218.00			

When Table 4 is examined, it is seen that there is no significant difference according to the pretest success scores of the experimental and control group group nongifted students [U=98.00, z=-.624, p> .05]. "Is there a significant difference between the skill-based achievement test pretest scores of the experimental and control group students of the algebra course taught with the scenario-based learning method for 7th grade s grade nongifted students? Since the data for the question did not show a normal distribution, analysis was made with the Mann Whitney U test and the analysis results are given in Table 5.

Table 5. Difference between pretest achievement scores of 7th grade experimental and control groups groups nongifted students

	Group	**N**	**Hydrangea**	**Rank Avg.**	**Rank Total**	**U**	**Z.**	**p**
Achievement test	Control	14	30.00	15.04	210.50	90.50	-.353	.724
	Experiment	14	30.00	13.96	195.50			

When Table 5 is examined, it is seen that there is no significant difference according to the pretest success scores of the experimental and control group nongifted students [U=90.50, z=-.353, p> .05].

Findings for Sub-Problem 2

Since the data of the question "Is there a significant difference between the skill-based achievement test pretest and posttest scores of the experimental group students of the algebra course taught with the Scenario-based learning method for 6th grade grade nongifted students?" was not normally distributed, it was analyzed with the Wilcoxon test and The analysis results are given in Table 6.

Table 6. Difference between pretest and posttest scores of the 6th grade experimental group without a special talent diagnosis

	Test	**N**	**Hydrangea**	**Z.**	**p**
Experimental group	Pretest	15	19.98	-3.420	.001
	Posttest	15	53.28		

When Table 6 is examined, it is seen that there is a significant difference between the skill-based achievement test pretest and posttest scores of the experimental group students of the algebra course taught with the scenario-based learning method (Z = -3.420, p < .05). When the median value (Mean = 53.28) is examined, it is understood that the significant difference is in favor of the posttest. This result shows that the algebra course taught with the scenario-based learning method is effective in the experimental group.

"Is there a significant difference between the skill-based achievement test pretest and posttest scores of the experimental group students of the algebra course taught with the scenario-based learning method for 7th grade grade nongifted students? Since the data for the question '' did not show a normal distribution, the analysis was made with the Wilcoxon test and the analysis results are given in Table 7.

Table 7. Difference between pretest and posttest scores of the 7th grade experimental group nongifted students

	Test	N	Hydrangea	Z.	p
Experimental group	Pretest	15	30.00	-3.089	.002
	Posttest	15	45.00		

When Table 7 is examined, it is seen that there is a significant difference between the skill-based achievement test pretest and posttest scores of the experimental group students of the algebra course taught with the scenario-based learning method (Z = -3.089, p < .05). When the median value (Mean = 45.00) is examined, it is understood that the significant difference is in favor of the posttest. This result shows that the algebra course taught with the scenario-based learning method is effective in the experimental group.

Findings for Sub-Problem 3

Since the data for the question "Is there a significant difference between the skill-based achievement test pretest and posttest scores of the 6th grade control group group nongifted students?" was not normally distributed, the analysis was made with the Wilcoxon test and the analysis results are given in Table 8.

Table 8. Difference between pretest and posttest scores of the 6th grade control group nongifted students

	Test	N	Hydrangea	Z.	p
Control Group	Pretest	15	26.64	-1.754	.079
	Posttest	15	33.30		

When Table 8 is examined, it is seen that there is no significant difference between the skill-based achievement test pretest and posttest scores of the control group group nongifted students (Z= -1.754, p> .05). This result shows that the regular course taught in the control group increased the success in skill-based questions, but this increase shows that it is not significant.

''Is there a significant difference between the skill-based achievement test pretest and posttest scores of 7th grade control group control group nongifted students? Since the data for the question "" did not show a normal distribution, the analysis was made with the Wilcoxon test and the results of the analysis are given in Table 9.

Table 9. Difference between pretest and posttest scores of the 7th grade control group nongifted students

	Test	N	Hydrangea	Z.	p
Control Group	Pretest	14	30.00	-1.558	.119
	Posttest	14	30.00		

When Table 9 is examined, it is seen that there is no significant difference between the skill-based achievement test pretest and posttest scores of the control group nongifted students (Z= -1.558, p> .05). This result shows that the regular course taught in the control group has no effect on skill-based success.

Findings for Sub-Problem 4

"Is there a significant difference between the skill-based achievement test posttest scores of the experimental and control group students of the algebra course taught with the scenario-based learning method for 6th grade students grade nongifted students? Since the data for the question '' did not show a normal distribution, analysis was made with the Mann Whitney U test and the results of the analysis are given in Table 10.

Table 10. Difference between posttest achievement scores of 6th grade experimental and control groups nongifted students

	Group	N	Hydrangea	Rank Avg.	Rank Total	U	Z.	p
Achievement test	Control	15	33.30	9.13	137.00	17.00	-4.017	.000
	Experiment	15	53.28	21.87	328.00			

When Table 10 is examined, it is seen that there is a significant difference according to the posttest success scores of the experimental and control group students group nongifted students [U=17.00, z=-4.017, p< .05]. When the posttest median value of the experimental group (Mean = 53.28) is compared with the posttest median value of the control group (Mean = 33.30), it is understood that the significant difference is in favor of the experimental group. This result shows that the algebra course taught with the scenario-based learning method is effective on the posttest scores of the experimental group.

The data of the question "Is there a significant difference between the skill-based achievement test posttest scores of the experimental and control group students of the algebra course taught with the scenario-based learning method for 7th grade grade nongifted students?" were analyzed with the Mann Whitney U test because they did not show a normal distribution and the analysis results are given in Table 11.

Table 11. Difference between posttest achievement scores of 7th grade experimental and control groups groups nongifted students

	Group	N	Hydrangea	Rank Avg.	Rank Total	U	Z.	p
Achievement test	Control	14	30.00	9.25	129.50	24.50	-3.435	.001
	Experiment	14	45.00	19.75	276.50			

When Table 11 is examined, it is seen that there is a significant difference according to the posttest success scores of the experimental and control group students group nongifted students [U=24.50, z=-3.435, p< .05]. When the posttest median value of the experimental group (Mean = 45.00) is compared with the posttest median value of the control group (Mean = 30.00), it is understood that the significant difference is in favor of the experimental group. This result shows that the algebra course taught with the scenario-based learning method is effective on the posttest scores of the experimental group.

Findings for Sub-Problem 5

"Is there a significant difference between the pretest and posttest scores of scores of gifted students? In order to find an answer to the question "", an experimental group was formed with 6th grade 6th grade gifted students, and the pretest-posttest scores of three students in the experimental group were examined. 6th grade students were randomly coded as 6S1, 6S2, 6S3. Correct answers were given 1 point, incorrect and blank answers were given 0 point. Due to the current number of 6th grade gifted students, the questions in the achievement test were categorized in terms of achievement, and then the score and total scores of the achievements were interpreted according to development and regression. The benefits are as stated below.

Learning Achievment: M.6.2.1.1. Writes an algebraic expression appropriate to a verbally given situation and a verbal situation appropriate to a given algebraic expression.

Learning Achievment: M.6.2.1.2. It calculates the value of the algebraic expression for different natural number values that the variable will take.

Learning Achievment: M.6.2.1.3. Explains the meaning of simple algebraic expressions.

Attainment achievement evaluations of sixth grade grade gifted students are given in Table 12.

Table 12. Evaluation of achievement success of 6th grade gifted students

		Achievement 1	Achievement 1	Achievement 1	Total score
6S1	Pretest	2	2	0	4
	Posttest	4	5	4	13
	Evaluation	+	+	+	+

6S2	Pretest	4	2	4	10
	Posttest	5	5	5	15
	Evaluation	+	+	+	+
6S3	Pretest	2	2	2	6
	Posttest	4	4	3	11th
	Evaluation	+	+	+	+

(The + symbol symbolizes development, the - symbol symbolizes regression, and the / symbol symbolizes the absence of change.)

In line with the data obtained, an increase was observed in all achievement dimensions and total scores of all 3 students. While the student coded 6S1 obtained a total of 0 points in the 3rd achievement come in the pretest, after the application, he made progress in four of the five questions of the 3rd achievement and answered correctly. The student coded 6S2, who got the highest score in the pretest, answered all the questions correctly in the posttest after the application and received a full score. The student coded 6S3, like the other students, made progress in every achievement and increased his total score. When we look at the increases in students' achievements in general, it is seen that the biggest increase difference in total is in the 2nd achievement.

''Is there a significant difference between the pretest and posttest scores of gifted students? In order to find an answer to the question "", an experimental group was formed with 7th grade gifted students, and the pretest-posttest scores of the four students in the experimental group were examined. 7th grade students were randomly coded as 7S1, 7S2, 7S3 and 7S4. Correct answers were given 1 point, incorrect and blank answers were given 0 point. Due to the current number of 7th grade gifted students, the questions in the achievement test were categorized in terms of achievement, and then the score and total scores of the achievements were interpreted according to development and regression. The benefits are as stated as follows:

M.7.2.1.1. Performs addition and subtraction operations with algebraic expressions.

M.7.2.1.2. Multiplies an algebraic expression by a natural number.

M.7.2.2.1. Understands the principle of conservation of equality.

Attainment achievement evaluations of sixth grade gifted students are given in Table 13.

Table 13. Evaluation of attainment achievement of 7th grade gifted students

		Achievement 1	**Achievement 1**	**Achievement 1**	**Total score**
7S1	Pretest	6	4	5	15
	Posttest	6	5	5	16
	Evaluation	/	+	/	+
7S2	Pretest	5	3	3	11th
	Posttest	6	5	4	15
	Evaluation	+	+	+	+
7S3	Pretest	3	0	one	4
	Posttest	4	5	2	11th
	Evaluation	+	+	+	+
7S4	Pretest	5	2	3	10
	Posttest	7	6	4	17
	Evaluation	+	+	+	+

(The + symbol symbolizes development, the - symbol symbolizes regression, and the / symbol symbolizes the absence of change.)

In line with the data obtained, the total score of all 4 students increased. There was no change in the success scores of the student coded 7S1 in the 1st and 3rd objectives. Students coded 7S2 and 7S4 increased their scores in all achievements and also increased their total scores. The student coded 7S3 received 0 in the pretest. 2. He received 5 points by answering all of the achievement questions correctly in the posttest. When we look at the increases in students' achievements in general, it is seen that the biggest increase difference in total is in the 2nd achievement.

Findings for Sub-Problem 6

In order to find an answer to the question " What are the opinions of gifted students about the scenario-based learning method in teaching algebra?", the opinions of the students were taken with a semi-structured form after a two-week lesson taught with scenario-based learning with the experimental group. By examining the students' answers, the answers were divided into the themes of attitude, opinion and anxiety. Themes were then detailed into categories and codes. Analyzes regarding the answers are given in the tables below.

Table 14. Distribution of gifted student opinions about scenario-based learning method in teaching algebra according to the codes of attitude theme

Categories	Codes	f	%
Attitude	Effective	3	42.8
	Fun	2	28.6
	Curious	2	28.6

As seen in Table 14, student opinions regarding the attitude theme were examined and a single category was created based on the answers. According to the answers obtained, students defined themselves as more effective (42.8%) in lessons taught with scenario-based learning in algebra teaching. In addition to feeling effective, students were curious about scenario-based learning (28.6%) and thought it was fun (28.6%). Sample student answers are given below.

"It was enjoyable to be included in the scenarios and be active, it helped me reinforce the subject." (S1)

"It was more fun than traditional teaching. "I thought this teaching method was more useful for me." (S4)

"Doing a verbal activity in mathematics class made me curious. The questions were also interesting."(S3)

Table 15. Distribution of gifted student opinions about scenario-based learning method in teaching algebra according to categories and codes of the opinion theme

Categories	Codes	f	%
Positive	Effective permanent learning	4	57.1
	Use in other mathematics units	1	14.3
	Use in other branches	1	14.3
Negative	Long lasting	1	14.3

As seen in Table 15, student opinions regarding the opinion theme were examined and two categories were created according to the answers. The number of students who think that the lessons taught according to the scenario-based learning method in algebra teaching provide permanent learning by doing and experiencing compared to the current teaching (57.1%) is quite high. In addition, it was concluded that students wanted this method to be used in other challenging mathematics subjects (14.3%) and in all other branches (14.3%). Students also expressed the opinion that teaching lessons with this method takes too long (14.3%). Sample student answers are given below.

"It was a method that enabled students to understand algebra by participating in the activity. "I think it will make learning easier for students who have difficulty in mathematics." (S6)

"I think it can be used in every subject other than algebra, and it would also be useful to use it in a course other than mathematics." (S4)

"Some mathematics subjects are suitable for the structure of this method, and it may be good to use it in those units." (S3)

"It took longer than other courses." (S7)

Table 16. Distribution of gifted student opinions about scenario-based learning method in algebra teaching according to the codes of the anxiety theme

Categories	Codes	f	%
Anxiety	Decrease in anxiety	4	57.1
	Don't feel comfortable	3	42.9

As seen in Table 16, student opinions regarding the theme of anxiety were examined and two codes were created based on the answers. When the opinions against the scenario-based learning method in algebra teaching were examined, it was concluded that the students' anxiety decreased compared to the current teaching (57.1%) and they felt comfortable because they understood the subject better (42.9%). Sample student answers are given below.

"In this teaching method, I was able to use my imagination as I wished and expressed my questions freely." (S2)

"It encourages students to participate in the lesson in a very entertaining way." (S6)

"When I did not understand the subject in mathematics, I was very nervous in case they asked questions, but since I understood the subject, I did not hesitate at all." (S5)

Findings for Sub-Problem 7

In order to find an answer to the question " What are the opinions of nongifted students about the scenario-based learning method in teaching algebra?", the opinions of the students were taken with a semi-structured form after a two-week course taught based on the scenario-based learning method with the experimental group. By examining the students' answers, the answers were divided into the themes of attitude, opinion and anxiety. Themes were then detailed into categories and codes. Analyzes regarding the answers are given in the tables below.

Table 17. Distribution of nongifted student opinions about the scenario-based learning method in teaching algebra according to categories and codes of the attitude theme

Categories	**Codes**	**f**	**%**
Positive	Fun	8	27.59
	Excited	11	37.92
	Curious	8	27.59
Negative	Roles not distributed equally	1	3.45
	Long lasting	1	3.45

As seen in Table 17, student opinions regarding the attitude theme were examined and two categories were created based on the answers. When the answers are examined, the number of students who find the lessons taught with the scenario-based learning method in Algebra teaching exciting is more (37.92%). It seems that most of the student opinions about the algebra course taught with this method are positive. Sample student answers are given below.

"It was like we did theater rather than our usual lectures, I had a lot of fun. "I liked the roles very much and it was very enjoyable to act out the roles with my friends." (S22)

Normally, the problem is given to us and we solve it, but solving questions based on other people's experiences is a very exciting thing. "I especially loved the role of the gray-bearded grandfather because he helped us solve the problem with the advice he gave to the princess." (S5)

"I wondered what we would do since it was our first time teaching such a lesson. As the scenarios were processed, I was able to figure out how the characters would solve the problems myself, which made me feel good' (S7)

"Some roles were more like leading roles, some were less prominent, I wish they were all cast in the same way" (S4)

"I actually liked it, but it seemed like we dwelled on it for too long " (S16)

Table 18. Distribution of nongifted student opinions about the scenario-based learning method in teaching algebra according to categories and codes of the opinion theme

Categories	**Codes**	**f**	**%**
Towards Scenario-Based Learning Approach	Making algebra easy	10	34.48
	Permanent learning	14	48.27
Future Course Processing	All math units	4	13.8
	Some math units	1	3.45

As seen in Table 18, student opinions regarding the opinion theme were examined and two categories were created based on the answers. According to student answers, it is seen that the lessons taught according to the scenario-based learning method in teaching algebra provide permanent learning by doing and experiencing (48.27%), and also make learning algebra easier (34.48%). In addition, it was concluded that students may prefer to use this method in all mathematics courses (13.8%) or in certain units (3.45). Sample student answers are given below.

"I think if we teach all mathematics lessons like this, we will understand every subject very well. "It was like we were playing a game, not in a math class." (S17)

"I remembered the lesson better because I was involved in the lesson and participated actively. "I was curious and learned while having fun." (S11)

"Algebra is not like a math class. It contains letters and variables, it seems very complicated, but this method helped me understand it better by making an analogy." (S21)

"If the issue of ratio and proportion had been explained with this method, I would have understood it better. It seemed very complicated." (S25)

Table 19. Distribution of nongifted student opinions about the scenario-based learning method in teaching algebra according to categories and codes of the anxiety theme

Categories	Codes	f	%
Positive	Don't feel comfortable	18	62.06
	Active participation	8	27.59
Negative	Fear of change	2	6.9
	Had no effect	1	3.45

As seen in Table 19, student opinions regarding the theme of anxiety were examined and two categories were created based on the answers. The majority of the students stated that they felt more comfortable in the Algebra lesson taught with the scenario-based learning method compared to the current teaching (62.06%) and that they showed a desire to participate in the lesson more (27.59%). In addition, there are also student opinions that talk about the fears brought by change (6.9%) and that it does not affect anxiety (3.45%). Sample student answers are given below.

"Since I understood the subject, I did not hesitate to raise my hand and participated in the lesson more." (S29)

"It seems more complicated when you learn with rules. This method seemed more friendly and comfortable." (S28)

"I was a little hesitant because it was the first time we had a lesson like this and I was afraid of making mistakes because I wasn't used to it." (S9)

"The method had no effect on me. Mathematics is difficult and I can not do it." (S16)

Conclusion and Discussion

This research covers the effect of the scenario-based learning method in algebra teaching on the success of gifted and nongifted students in skill-based questions and their views on teaching. Suggestions regarding the results are also included in this section.

Achievment

When the pretest and posttest average results of the 6th and 7th grade experimental group students group nongifted students are examined, it shows that the effect of the course taught with the scenario-based learning method in algebra teaching on the success of the experimental group students in skill-based questions is significant. This research shows that using the scenario-based learning method in the algebra teaching process increases success in skill-based questions. Studies stating that mathematics lessons taught with the scenario-based learning method are beneficial in increasing student success and increase academic success (Bakaç, 2014; Kocayusuf, 2014) coincide with the results of the current

research. The fact that the scenario-based learning method contributes to the development of reflective thinking skills (Gülmez Güngörmez, Akgün, & Duruk, 2016) also confirms its positive result on skill-based questions. In addition, there are studies showing that lessons taught with this method support the permanence of courses taught with this method and increase course success in Science and Social Studies courses, apart from Mathematics (Aslan, 2019; Cornely, 1998; Kocayusuf, 2014; Kemiksiz, 2016; Yeniceli, 2016; Karcı, 2018; Pektezel, 2017).

When the pretest and posttest average results of the control group of 6th and 7th grade students grade nongifted students were examined, it was shown that the course taught by applying existing teaching methods in teaching algebra with the control group students had an effect on the students' success in skill-based questions, but there was no difference in this success. There are studies stating that in order to ensure student success in skill-based questions, the teacher must renew himself according to the system (Atay, 2021) and change the teaching method (Çetin, 2019). Therefore, it can be thought that the current learning method will be insufficient to ensure success in the skill-based questions of algebra, which is an abstract learning field, requiring high-level thinking, association and decision-making abilities. The traditional learning method is insufficient in teaching algebra, where abstract thinking and logical inference are at the forefront, so there are studies using different teaching methods in which the student is more active, interprets and structures the information, and can use mathematical language, and successful results are obtained with these methods (Akkaya, 2006; Nwabueze, 2006; Çağdeşer, 2008; Üner, 2009; Kaş, 2010; Görgün and Eken, 2020). Similarly, Hassan, Hammadi and Majeed (2023) found that students who used the scenario-based learning method in the course had lower mathematics achievement and mental motivation compared to students who used the traditional method. Stating that it is better is consistent with the research findings.

When the findings of the posttest averages applied to the experimental and control groups of 6th and 7th grade students grade nongifted students were examined, the averages were found to be significant in favor of the experimental group. In this case, the experimental group students who attended the algebra course taught with the scenario-based learning method were more successful in skill-based questions, while the control group students who took the course with the traditional method achieved lower success in skill-based questions. Compared to courses taught with existing methods and techniques, the scenario-based learning method improves critical thinking and increases decision-making skills in the problem-solving process (Golden, 2018), is a more successful method in non-routine problems (Temur and Turan, 2018), and helps students increase success by structuring their own knowledge (Papadimitriou, 2012) support the findings of the current research. This situation shows that students are in favor of the scenario-based learning method, which transforms the problems into concrete and enables them to make decisions in the plot, instead of the current learning method in skill-based questions.

When the pretest and posttests of the 6th and 7th grade experimental group students group gifted students were analyzed, an increase was observed in their total scores and achievement-based scores in favor of the posttest. The research shows that using the scenario-based learning method in the algebra teaching process increases the success of gifted students in skill-based questions, and that gifted students solve and pose real- life problems more easily when they enrich their mathematical experiences in the classroom environment, taking into account their creativity (Manuel & Freiman, 2017) has been proven. The development of students' reasoning and decision-making abilities with the scenario-based learning method (Singh, Pervak, Onyshchenko, & Yehorenko, 2023) supports the idea that it will facilitate the development of high-level thinking skills required for skill-based questions.

Student Opinions

When the opinions of the students in the experimental group gifted students were examined, they stated that in the attitude theme, the students saw themselves as more effective (42.8 %) in the algebra course taught with the scenario-based learning method. Scenario-based learning method attracts students' attention and is an effective way for them to gain sufficient skills in the applied subject (Mariappan, Angela, & Peter, 2004). and it seems to affect students' attitudes positively (Kocadağ, 2010; Çakır, 2017; Taneri, 2018). Likewise, Flynn and Klein (2001) stated that students using the scenario-based learning method showed an increase in their interest and motivation towards the course by revealing differences in performance and time management, which is another result that supports the current research. In the

opinion theme, the majority of the students think that using the scenario-based learning method in teaching algebra provides permanent learning by doing and experiencing (57.1 %). This result coincides with Sorin's (2014) view that students take a more active role and gain experience with real-life problems through the scenario-based learning method, which provides an authentic learning environment. In the theme of anxiety, it was observed that that gifted students had a decrease in their anxiety compared to the current education (57.1 %) and they felt more comfortable due to a good understanding of the subject (42.9%). A similar result was revealed in the study conducted by Özsevgeç and Kocadağ (2013) and it was stated that the scenario-based learning method made the learning process enjoyable by activating the students. In this case, it is thought that using the scenario-based learning method in algebra teaching lesson plans will be effective in reducing prejudices towards algebra and mathematics courses.

When the opinions of the nongifted students in the experimental group were examined were examined, they stated that the lessons taught with the scenario-based learning method in the attitude theme made them feel excited (37.92%), fun (27.59%) and curious (27.59%). In the opinion theme, the fact that the majority of the students stated that scenario-based learning provides permanent learning (48.27%) coincides with the study of Ciraj, Vinod and Ramnarayan (2010) stating that scenario-based learning makes knowledge permanent by providing active learning. In the research, regarding the anxiety theme, the majority of the students stated that they felt more comfortable (62.06%) compared to the current education. Süğümlü (2009) stated that the scenario-based learning method contributes to the students' communication skills by developing their imagination and creativity, and helps students concretely reflect the information they have learned by doing and experiencing into life. This is similar to the results of the research in which they stated that they were more comfortable. While the result of Çenberci and Tol (2019) that the scenario-based learning method positively affects students' self-efficacy perception coincides with the result of the current study, it contradicts the result that does not affect students' attitudes and anxiety towards the mathematics course.

Recommendations

- Knowing that students are prejudiced against mathematics and skill-based questions, the scenario-based learning approach, in which the individual is active, learns while having fun, and makes it easier to connect with real life, can be preferred by teachers. Scenario writing and applications can be included in in-service and pre-service training so that teachers can improve themselves in this learning method.
- Making preliminary preparations for lessons to be taught with a scenario, paying attention to the time allotted in the lesson and the distribution of tasks of the people can be helpful in ensuring students' participation in the lesson.
- Scenario classes can be created in secondary schools and Science and Art Centres and all branch teachers can be encouraged to use them.
- The research is limited to 6th and 7th grade students in Kars province. For this reason, it can be applied at different grade levels and school types for the accuracy of generalizations.
- In terms of the reliability of the research, scenario-based learning method can be used for a longer period of time and follow-up studies can be carried out by obtaining detailed qualitative opinions.
- Since this research is limited to the algebra subject of the mathematics course, scenario-based learning method can be used in different disciplines and subject areas and students' opinions on success and teaching can be detailed.

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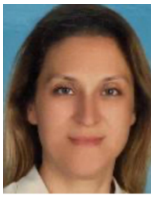

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Interview Article

An interview with Sule Demirel Dingec: about helping parents raise gifted children

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Abstract

In this current day and age it is difficult to parent children. It is even more difficult to parent and raise children who may be intellectually gifted or musically talented or creative. In this interview Dr. Sule Demirel Dingec discusses the role of the teacher, parent and counselor in terms of helping the gifted. She provides some insights into assisting students with the social and emotional concerns as well as addressing the need for mentors and supportive others. It is hope that this interview will provide some assistance to parents and alert others to her pending book which will provide even greater assistance.

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Michael F. Shaughnessy: First of all, can you please tell us about your education and experience?

Şule Demirel Dingeç: My name is Şule Demirel Dingeç. I have been working in the field of education for gifted individuals at Anadolu University in Turkey since 2007. In the applied dimension, I have conducted studies on character and values education with gifted children at our university's Education and Research Center for Gifted Children. In recent years, I have been actively involved in providing educational counseling for families of gifted students. In the academic context, my areas of focus include the sociocultural dimensions of giftedness, the identification of giftedness, intelligence scales, social-emotional needs of gifted individuals, and family and teacher training.

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Michael F. Shaughnessy: Now, why did you write this book and what is the title of it?

Şule Demirel Dingeç: Firstly, the title of the book is: "Gifted Individuals and Their Families: Roles, Needs, Recommendations." In fact, the title of the book is directly related to the reason for writing it.

The questions and difficulties faced by the families I frequently met at the center where I work, as well as the challenges they encountered, led to a project. Within the scope of this project, my team and I developed and implemented a family education program. Families who found this education beneficial expressed their desire to revisit this information from time to time but lacked a resource. They requested a source from us. Along with my other co-authors, I decided to write this book. The content of the family education program in the project had already been prepared by the families themselves when we decided to write the book.

Michael F. Shaughnessy: What challenges do parents face when raising their gifted children?

Şule Demirel Dingeç: I believe the first challenge encountered is when parents, who are generally happy after the identification, are left wondering what to do next. After the identification, parents start worrying about how to support their children. Schools that can support their children or schools with differentiated classes are limited. After-school programs are also limited, and some schools claiming to provide education for the gifted may not have quality content. Sometimes, parents want to support their children with a mentor, but they struggle with how to find one. In summary, one of the most significant challenges parents face is connecting their children with opportunities that can support their talent development.

Other significant challenges involve the social and emotional situations that the child and, consequently, the family encounter. Gifted children may have difficulty finding friends, either due to their natural characteristics or the label effect. The child's loneliness, social communication problems, the parents' efforts to find friends for the child, and their attempts to be friends with the child can sometimes add extra roles. These situations can sometimes progress in an unhealthy way. For example, even well-intentioned parents may not provide opportunities for the natural development of their children's abilities due to excessive expectations or excessive attention. Therefore, families of children in this group may face difficulties due to excessive expectations and attention.

Michael F. Shaughnessy: Are the challenges different for intellectually gifted as opposed to talented or creative students? How does this affect families?

Şule Demirel Dingeç: In the definition of giftedness accepted in Turkey, both intellectual and performance areas are included. However, when we look at the implementation, there are limitations in all of them, but intellectual orientations are generally emphasized. Therefore, a child gifted in academic areas can, with some difficulty, find support, but a child gifted in other areas may be disadvantaged even in the identification stage. Afterward, the child can develop their talent with after-school supports through the individual efforts of the family.

I think in Turkey, mathematics and science are more valued in society currently. On the other hand, there are qualified conservatories in the field of art, but the same cannot be said for sports academies. Especially in high school entrance exams, academically talented children get into elite schools, and those with lower scores go to sports schools. This situation puts parents in a dilemma between supporting their children in the talent area where they will be happy and preparing them for elite academic schools or directing them towards socially accepted career choices. Usually, they prioritize academic content and support other areas as hobbies.

Michael F. Shaughnessy: How can parents find mentors and counselors for gifted children in your country? And how important do you think they are?

Şule Demirel Dingeç: As I mentioned earlier, the individual efforts of parents are crucial in this regard. Parents can seek support in finding a suitable mentor by contacting experts at universities. Unfortunately, there is currently no platform that is both reliable and easily accessible for this purpose. However, in Turkey, many gifted students can experience transformative effects in talent development with mentor support. Sometimes, the child consulting with us may not have similar peers in their school, or their level may exceed that of other gifted children. In such cases, mentorship can be very appropriate. There may be individuals capable of being excellent mentors, but we are weak in

bringing them together. For example, I introduce some families to a few mentors from my personal repertoire, and there can be both successful and unsuccessful matches.

Michael F. Shaughnessy: Are there support networks in your country to support parents?

Şule Demirel Dingeç: Unfortunately, they are very limited. Sometimes, parents come together on their own, but these are short-term gatherings. Sometimes, a few associations are established but cannot continue their active existence. However, at this point, it is not fair to blame the legal framework and its deficiencies in the country. Because first, parents need to demand this to meet their needs. They need to request their rights not just momentarily but continuously and stay together. Experts can develop good family education programs, create meeting platforms, but no expert can replace the role of the family.

Michael F. Shaughnessy: Are there differences in raising gifted girls as opposed to gifted boys?

Şule Demirel Dingeç: Let me give you an example of this. Girls who apply to the center I work for, which is for gifted and talented students. The program at the center is mainly focused on mathematics and science, and the application rates are dominated by boys. However, among the winners of the program, there can be girls who take the first place. But at the application stage, girls are not very confident in mathematics and science. Although this number has increased in recent years, it is still higher in favor of boys.

This situation may not be specific to gifted students in Turkey but could be a general perception for all. For instance, one of my female graduate students at the university initially won admission to engineering but chose education faculty and graduated as a mathematics teacher. Therefore, rather than differences in upbringing, I can say that there are cultural and social stereotypes specific to gender.

Michael F. Shaughnessy: Many gifted children around the world have some mental health issues. How are things in your country?

Şule Demirel Dingeç: In studies in our country, the number of individuals with mental health problems in special or gifted individuals does not seem much higher than the world average. However, this may be due to the limitations of studies in our country. To give an example from personal observations, families coming for identification to the center where I work used to often say, "If our child has a behavioral problem or hyperactivity, is it related to high intelligence or not?" They were quite numerous. We share with them that these conditions may not always be observed together. I think they want to balance a difficult situation with the positive effect of a label they find favorable, but in the past year, I have noticed an increase in specific learning difficulties in children diagnosed as gifted compared to previous years.

Michael F. Shaughnessy: How well prepared are teachers to work with gifted students? What do you think about the collaboration between parents, teachers, and experts in this context?

Şule Demirel Dingeç: Sometimes, I think about my teachers, especially my primary school teacher. I remember the positive impressions she left on me many times in my life with a smile on my face. I believe that the teacher can be a turning point for gifted students, either positively or negatively. In Turkey, some of the teachers working with these students are genuinely enthusiastic and open to development, while others are not very competent. Therefore, to have more qualified teachers working with gifted students, it is the responsibility of not only them but also many stakeholders. For example, at education faculties, any teacher candidate in any field should receive education on how to recognize and support these children, whom to apply to for support, when they start their profession. Teachers working with gifted students should be open to development and constantly follow innovations in their field, but they should not be left alone to do something with their own efforts. For this, it is important that academics work with teachers, teachers do not become disconnected from families, and all stakeholders do not see each other as competitors but work together for the same goal, the well-being of the child.

Michael F. Shaughnessy: What is the role of intelligence testing in identifying gifted students?

Şule Demirel Dingeç: I believe that intelligence tests predict academic skills well and provide important information in this regard. However, it is not easy to measure, let alone define, what intelligence really is. Therefore, when

information about general intelligence or intellectual abilities is needed, these tools can be used to determine the level of the child according to their age and, more importantly, to identify their strong and weak points. However, neither intelligence tests nor any other tool should be idolized. Process-based diagnostics are not very easy or economical but increase the accuracy of correct identification. Therefore, when discussing the results of a intelligence test with families, I always remind them of this. We conducted a 1-hour evaluation here, and the child may have qualified for a program with the report obtained. But maybe after 2 years, the child can make another skill leap that we did not see here, or situations that need support may arise. Even as the child grows older, it would be better to make field-specific evaluations. It is not easy to define or measure intelligence and ability, but it is possible to accept that it is dynamic.

Michael F. Shaughnessy: How well has your book been received?

Şule Demirel Dingeç: We sent the first edition of the book as a gift to the families we provided education to, which triggered us to write the book, and each of them responded very positively. Additionally, the limited availability of Turkish resources on the subject was seen as a significant contribution by our colleagues. I thank them all. While writing a book, the goal is to contribute to the field, but personally, there is something else that I consider very important. That is creating change. In other words, I would be happiest if this book touches the real lives of even a few of the families who read it. Although the book is very new, for now, I can say that I received feedback from one mother. She wrote to me that her communication with her gifted child completely changed, and things at home started to improve. These are very valuable.

Michael F. Shaughnessy: What advice do you have for parents with gifted children?

Şule Demirel Dingeç: I have two fundamental pieces of advice for parents to help their children. Firstly, they should remember that they have not only a "gifted" child but fistly a "child." Excessive expectations can do more harm than good. After that, I would recommend them to remain calm and positive to support their children. Sometimes, opportunities, experts, schools, programs may be limited, or the energy of the parents may decrease. Sometimes the dream school you envision may not be in your area, but there is always something you can do.

Autobiography of Şule Demirel Dingeç

Şule Demirel Dingeç works at Anadolu University, Faculty of Education, Department of Gifted Education. She is also the coordinator of social programs and family education at EPGT Application and Research Center. He completed his master's degree and doctorate in the field of gifted education. She is one of the authors of Türkiye's first domestic intelligence scale, ASİS. He has studies on character development in gifted students, values education and sociocultural dimensions of giftedness. E-mail: suledemirel@anadolu.edu.tr

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