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Are Special Education Teachers Ready for Distance Education? Experiences and Needs During the Covid-19 Outbreak

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Abstract

This study was conducted to determine the experiences and needs of special education teachers regarding distance education during the COVID-19 pandemic. Screening model and convenient sampling technique were used. Participants were 191 active special education teachers from İzmir, Turkey in the academic year of 2019-2020. Special Education Teacher Needs Analysis Form developed by the researchers was used as data collection tool. Orange and SPSS programs were used for analyzing. Results indicate that most of the teachers stated they are technology literate and few had been trained in distance education. Most of them have developed at least one of the homework, IEP (individualized education plan), computer/web supported materials, educational mobile applications, materials, educational video applications. Only a quarter of teachers taught live lessons. They mostly provide feedback and interact partially, individualize lessons partially, cooperate with their colleagues partially in distance education. They stated that if there was an e-mentor to support them in this environment, they would feel ready. Moreover, the most encountered difficulty is their students' use of technology. These findings indicate that teachers should customize for individual students' needs, provide frequent feedback, keep the teacher family communication strong and receive in-service training on distance education.

Keywords: Covid-19, special education teachers, distance education, educational technology in special education

Özel Eğitim Öğretmenleri Uzaktan Eğitime Hazır mı? Covıd-19 Sürecinde Öğretmenlerin Deneyimleri ve İhtiyaçları

Öz

Bu araştırmanın amacı özel eğitim öğretmenlerinin pandemi sürecindeki uzaktan eğitimle ilgili deneyimleri ve ihtiyaçlarının belirlenmesidir. Çalışmada betimsel araştırma yöntemlerinden tarama modeli ve elverişli örnekleme tekniği kullanılmıştır. Katılımcılar, 2019-2020 eğitim ve öğretim yılında görev yapan, İzmir ilinden 191 özel eğitim öğretmenidir. Veri toplama aracı olarak araştırmacılar tarafından geliştirilen Özel Eğitim Öğretmeni İhtiyaç Analizi Formu kullanılmıştır. Verilerin analizinde Orange ve SPSS programları kullanılmıştır. Bulgular yüzde ve frekans şeklinde tablolaştırılarak sunulmuştur. Çalışmanın sonuçlarına göre öğretmenlerin hemen hepsi teknoloji okuryazarı olduklarını belirtmişlerdir. Öğretmenlerin neredeyse hiçbiri uzaktan eğitim konusunda eğitim almamıştır. Öğretmenlerin çoğu ödevler, BEP (bireyselleştirilmiş eğitim planı), bilgisayar/web destekli materyaller, eğitsel mobil uygulamalar, basılı materyaller, eğitsel video uygulamalarından en az birini geliştirmiştir. Öğretmenlerin sadece dörtte biri canlı ders yapmıştır. Öğretmenlerin çevrimiçi eğitimde çoğunlukla kısmen dönüt verebildiği ve kısmen etkileşim sağlayabildiği, kısmen bireyselleştirme sağladığı, meslektaşlarıyla kısmen işbirliği yaptığı görülmüştür. Öğretmenler bu ortamda kendilerine destek olacak e-mentor olsa hazır hissedeceklerini belirtmişlerdir. Ayrıca en fazla karşılaşılan güçlük öğrencilerin teknoloji kullanımıdır. Bulgular, öğretmenlerin öğrencilerin bireysel ihtiyaçlarını dikkate alarak öğretim yapması, sık geri bildirim vermesi, aile ile iletişimi güçlü tutması ve uzaktan eğitim konusunda öğretmenlerin hizmet içi eğitim alması gerektiğini göstermektedir.

Anahtar kelimeler: Covid-19, özel eğitim öğretmenleri, uzaktan eğitim, özel eğitimde eğitim teknolojisi

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1 | Introduction

The Coronavirus pandemic has taken over the world. Besides the damage it does to health, it has had a significant impact on our lives, particularly in the field of education. Since the coronavirus can spread rapidly and easily through social contact, many institutions have suspended work to slow the spread of the virus. Schools, universities, training courses and special education institutions have all taken such measures. A distance education system has been put into place to minimize the disruption in education. A change in education is extremely critical, based on the irrefutable significance of education in the lives of human beings. In this process, special education, in particular, is an issue that needs to be addressed more sensitively by both educators and families. With the introduction of the virus into our lives, it has become imperative to move to distance education (Sun et al., 2020). This new system has caused a great deal of debate, appears to be the only solution to continue education contact constraints during the pandemic.

The Effect of the Pandemic on Education

Because of coronavirus, societies around the world have been asked to comply with a range of measures to prevent and protect against the spread of a disease with such a high level of infection. The most effective measure against the spread of the virus is social distancing. This means keeping a distance with other people around us and avoiding contact with them as much as possible. For this reason, everyone should keep at least a distance of 2 meters from others. Since the Coronavirus is quickly transmitted, countries have closed their borders, canceled flights, and imposed curfews and restrictions in order to protect its spread. Moreover, cafés, restaurants, hair salons, shops, schools and businesses have been shut down.

It is clear that education has also been affected by coronavirus. The most challenging effect of the pandemic on education is school closures (Van Lancker & Parolin, 2020). According to Van Lancker & Parolin (2020), school closures have negative effects on children especially in low-income households such as increasing food insecurity and opening gap in academic achievement between low-income and high-income households. Due to the Coronavirus pandemic, more than 1.5 billion students have been suspended from formal education in all schools in 143 countries, including Turkey (UNESCO, 2020). In Turkey approximately 26 million students (including K-12 and higher education) are directly affected by the pandemic process due to the closure of schools. During this school closure period of time, it is stated that there are students who cannot be reached by distance education and many students are negatively affected (Pınar & Dönel Akgül, 2020).

School closures can be a short-term solution for preventing spread of the pandemic. However, when school closures take longer, it affects students academically and socially (Akat & Karatas, 2020). Due to the problems related to online education, student motivation decreases dramatically (Hartnett, 2016). Hence, this lack of motivation causes online learners being less successful compared to face-to-face learners (Baber, 2020).

Distance Education

Distance education is a type of education conducted via the technology where instructors and students are located in different locations. It is divided into two categories: online education and offline education. In online education, lessons are taught live on the internet; the instructor and the student attend the course simultaneously. In offline training, however, lessons are taught only by using video recordings. Students can watch lessons at their convenience, but there is no live instructor that meets with them in person.

The first distance education course offered were stenography courses offered by the Boston Gazette through a letter on March 20, 1728 (Holmberg, 1987) In 1890, an out-of-campus training program was established at the University of Queensland in Australia. Distance education has made great progress, particularly since World War II. Then, in the 1960s, distance education was carried out on television, thus

information was transported to students in various geographical regions. Subsequently, thanks to computers and the Internet, distance education has grown to be significant. Today distance education is used widely also due to technological advancements.

There are advantages and limitations of distance education that have begun to take place during the pandemic. Distance education has advantages. Students have a chance to attend classes whenever and wherever they want. It is also a great advantage that students who are unable to attend a scheduled session of a course. Instead, they can login and follow the course afterwards. In addition to that, it provides a great advantage in terms of accessibility and individualization for especially students with special needs.

In contrast, one of the primary limitations is that students do not have the opportunity to communicate face-to-face. This situation can be a disadvantage for students (Tiene, 2000). Students improve their social skills by communicating face-to-face with their peers, instructors and other people. Since face-to-face communication is not possible in distance education, students move away from social life, and this can harm students' mental and psychological health (Kmietowicz, 2020; Xiao, 2020). Face to face learning is important for both learning and personal development because improving social skills helps students succeed in their academic lives (Cartledge & Milburn, 1978). In face-to-face education, students also gain an understanding of how to communicate effectively and behave within the community. In traditional face-to-face education, students interact with others in many different places such as classrooms, dormitories, meetings, conferences, clubs, and activities. They meet and observe new people in all these different settings. In distance education, however, they do not recognize the environment because there is no face-to-face interaction.

At school, students briefly move away from the complexity of lessons by holding discussions and spending time with their peers between classes. Additionally, they can exchange ideas about lessons with their peers. It becomes easier for students to understand topics because they learn by attending classes with their teachers in face-to-face education in addition to being in circles of friends. If they have any questions or problems, they can communicate instantly. This, however, is not feasible in distance education. Responses typically take longer since contact is done by email. In addition, some scholars argue distance education produces unqualified graduates because it cannot provide one-to-one communication (Simpson, 2013).

Moreover, distance education, especially in applied science departments, is not feasible. In order to teach applied courses, laboratory environments, various materials, and certain tools are needed. It is also not possible to learn through the Internet courses that necessitate dexterity. For instance, for departments such as architecture, medicine, hairdressing, sculpting, painting and cooking, distance education cannot offer the appropriate environment. Therefore, distance education may not be the most effective way to teach or learn certain courses and limits learning (Toquero, 2020).

Furthermore, the classroom environment allows students to conduct teamwork. Interacting in person prepares students for business. This skill is developed in face-to-face courses, communication is a necessary skill in many fields. Technology has advanced, but face-to-face communication is still sine qua non. In fact, despite the advancing technology, the number of business trips is increasing day by day for this reason. This is because the most effective conversations are achieved through face-to-face communication (Kiesler, 2002). Schools teach students how to work in cooperation with their future colleagues, giving them knowledge on how to work together. This cannot be achieved to the same in distance education because students often work independently (Slavin, 1996). In addition, distance education gives students easiness and flexibility. While there are positive aspects to this situation, it takes them away from discipline. In the school building, a mandatory routine occurs which must be followed by students. For instance, students arrive in classrooms on a set class schedule and follow exam schedule as set by the school. In this way, they learn how to plan to become punctual and organized throughout their academic lives. Moreover, being accountable for what they do makes them stronger individuals (Fayden, 2005). These routines and rules are essential because skills learned at a young age are typically retained in adulthood. However, distance education is more flexible, so students don't adhere to strict schedules and get used to being comfortable.

Another limitation is that there are families who do not have Internet access or equipment in their homes such as televisions, computers, telephones, and so on. Connection to the Internet is challenging for students living in rural areas, such as villages and towns. Since cellular access in villages is not as reliable as in cities, it is not easy to provide coverage (Jurriens, 2017). In addition, there are very few K-12 educational institutions in developed and developing countries that offer distance education programs. Although we are in the age of technology, there are disruptions and malfunctions in the courses due to lack of infrastructure and Internet problems. It is also possible the stress of going through a difficult time period and uncertainties about the future will diminish students' enthusiasm for lessons, as our adverse thoughts about coronavirus can affect our behavior and reactions (Metin & Çetinkaya, 2020).

Despite the pros and cons, distance education has been the only way to prevent students' educational lives from being interrupted. Consequently, whether distance education in special education is an issue that is debated, both face-to-face education and distance education have advantages in different ways. In other words, it is obvious that in distance education, students with special needs may face some limitation in some ways. For this reason, distance education environments should be tailored in terms of students' needs. During this difficult time, the problems in the field of education should be minimized, and care should be taken to survive as few losses as possible.

The definitions should be emphasized in order to reduce the negative perception that may occur towards distance education and the negative experiences of learners and teachers who experience distance education for the first time. Defining the practices made during the Covid-19 crisis as emergency remote education is important in order not to increase the current negative opinions about distance education (Bozkurt, 2020). Bozkurt et al. (2020) mention the key four distinctions between the concepts of emergency remote education and distance education. (1) ERE is a must, whereas distance education is an option. (2) ERE tries to produce temporary solutions for the current need, whereas distance education tries to produce ongoing and permanent solutions within the framework of lifelong learning. (3) Although ERE is an effort to keep education alive with the facilities available in times of crisis, distance education is an effort to make education sustainable with planned and systematic activities in line with the specific theoretical and practical knowledge of the field. (4) Although ERE and distance education is expressed with the same word in Turkish, the concept of "remote" emphasizes physical distance, while the concept of "distance" emphasizes physical, interactional and psychological distance.

The Impact of the Pandemic and Distance Education on Special Education

In all aspects of life, the coronavirus pandemic has had a greater impact on people with special as compared to nondisabled people (Pineda & Corburn, 2020). This impact has been observed in the field of education, due to the implementation of distance education for students with special needs. Distance education environments must be set up to meet all students' needs, leaving no students with or without special needs behind. It is clear that people with special needs experience problems when distance education replaces or becomes superior to face-to-face education (Burdette et al., 2013). This is because students with special needs differ from their peers in terms of mental, emotional, communicational, social and physical characteristics (Lee et al., 2003). In distance education, it is also vital that students are supported socially and emotionally, not just academic needs. Therefore, more attention should be given to these students, to ensure that students reach their potential and to make education more accessible. In this context, it is necessary to interact and communicate with learners.

Planning for students with special needs have faced a variety of problems in distance education is more complex for students with special needs. Students with special needs need more help and guidance in distance education (Rose & Blomeyer, 2007). Moreover, more time and resources are needed for students with special needs to actively engage in learning. This includes equipment, access to the Internet and specially designed materials and individualized support. But this makes schooling more expensive and challenging for

students and their families (Rice & Carter, 2015). Additionally, they lose the opportunities to communicate with other peers in an overarching environment that is extremely important for students' social development.

Distance education were implemented during the pandemic in Turkey. The Ministry of National Education decided to carry out the courses within the scope of distance education through the Educational Informatics Network (EIN, EBA in Turkish), an online social educational platform run by the Innovation and Educational Technologies General Directorate and the national television channel, Turkish Radio and Television Corporation (TRT).

The Educational Informatics Network, which has been in operation since the 2011–2012 academic year and is the gateway to the future of education. This platform offers a variety of learning materials, including videos, documents, e-books, tests, activities, from the preschool to high school. EIN offers a variety of course and activity videos for students with special needs (Özer, 2020). For example, there are educational materials prepared in sign language for students with hearing impairments and over 400 educational activities for students with mild intellectual impairments or autism spectrum disorder.

Finally, another barrier is teachers' inability to adequately use information and communication technologies. One of the key issues is that teachers are not equipped to teach distance education and are not knowledgeable on how to engage students in courses, especially those with special needs (Hamilton et al., 2020).

Overcoming Problems Related to Pandemic in Special Education

In order to overcome these challenges, educators and families should collaborate to assess students' conditions individually and make the appropriate adjustments for distance education. This is because teacher–family collaboration positively influences all students, including students with special needs, both academically and socially (Desforges & Abouchaar, 2003; Evans, 2013; Henderson & Mapp 2002; Jeynes, 2007; Uludag, 2008). Additionally, the joint undertaking between the family of a student with special needs and the school is even more essential during special education, because a supportive family structure provides a positive contribution to the education and development of students with special needs (Öztürk, 2017). The importance of family–school collaboration is understood better particularly during this pandemic, and it is imperative to develop methods to improve or facilitate such collaboration (Hamilton et al., 2020).

Moreover, one of the most common mistakes made during the pandemic was to imitate face-to-face lessons in online lessons. Two hours of face-to-face lesson are not equivalent to two hours of online lessons. Instead, learners can be offered a 20-minute online course and asynchronous content supporting this course. A balanced instructional design should be made with both synchronous and asynchronous content presentations (Bozkurt, 2020). Curriculum and students' expectations of courses should be updated, as distance education implemented during the pandemic has been unlike any classroom-based educational environment. For example, homework can be simplified, students can dictate instead of writing, or audio resources can be given for reading assignments. Therefore, if necessary, IEPs of students with special needs should be updated to reflect the changes, or new IEPs should be created for the students taking into consideration their personal needs during this period.

Another practice that may be useful to people with special needs during the pandemic is the Universal Design for Learning (UDL). UDL is defined as an educational framework that facilitates the creation of a variety of learning environments for people of different backgrounds, learning styles, skills and barriers in order for them to acquire adequate training. The implementation of UDL weakens barriers and provides opportunities for all students to access the curriculum and engage and advance in education (Rose & Meyer, 2006). UDL aims to help teachers reach a wide range of students by concentrating on how students learn information and display their knowledge.

Research shows that students with special needs learn better through a project-based learning approach (Olnes, 2008). Project-based learning also improves self-esteem and promotes positive participation. As

schools have migrated to distance education during the pandemic, teachers have to have support and in-service training on how to teach special education courses in distance education and online environments.

There is no research on the experiences and needs of special education teachers during the pandemic. Therefore, this study addresses this gap. This study was conducted to determine the experiences and needs of special education teachers related to distance education during the pandemic. In this context, answers to the following research questions were sought:

1. What are special education teachers' experiences in distance education during the COVID-19 pandemic?

2. What are special education teachers' needs in distance education during the COVID-19 pandemic?

2 | METHOD

This study aims to explore the experiences and needs of special education teachers in distance education. Therefore, this research has screening model. In addition, since the study aims to describe past or present facts as they are, it was patterned according to the descriptive model (Karasar, 2005).

PARTICIPANTS

Convenience sampling technique was used to recruit participants for the study. The participants consisted of 191 volunteer special education teachers who taught at elementary, secondary and high school level in İzmir province. Demographic information of the teachers who participated in the study are shown in Table 1. 65% of the participants were female, and 35% were male. More than half of the teachers had over 11 years of working experience. Those with 21 years or more of working experience constituted the largest proportion with 27%. Almost half of participants (43%) taught at the elementary school level, while the rest taught at the levels of secondary school (28%) and high school (29%). The study participants are K-12 special education teachers from districts of İzmir province. The largest number of participants were from the Bornova district (83%).

Table 1. Demographic Information (n = 191)

	n	%		n	%
Gender			Grade level taught		
Female	125	65	Elementary School	82	43
Male	66	35	Secondary School	53	28
Working Experience in Years			High School	56	29
1–5 years	30	16	District of duty		
6–10 years	26	14	Bornova	158	83
11–15 years	46	24	Buca	4	2
16–20 years	36	19	Güzelbahçe	8	4
21 years or more	53	27	Karabağlar	17	9
			Menemen	4	2

DATA COLLECTION TOOL

Special Education Teacher Needs Analysis Form: The researchers developed the Special Education Teacher Needs Analysis Form, to use as a data collection instrument. Researchers have prepared an item pool by reviewing available literature and interviewing with experts and teachers. This item pool is 50 questions. These questions were reduced to 42 questions by eliminating duplicate and ambiguous questions in line with expert opinions (educational technology and special education).

The final form has a total of 42 questions made up of multiple-choice, double-choice, and open-ended questions. The first 6 questions are demographic questions. There are 36 questions about teachers' technological competence, technological tools they had, their distance education experiences during the

pandemic and their needs for distance education. Two special education specialists and a special education teacher were interviewed for the clarity, scope and face validity of the form.

Data Collection and Analysis

After the form was modified according to the experts' opinions, researchers conducted a pilot study with 30 K-12 special education teachers to test the functionality of the questions. The questions on the analysis form were functional and no problems were reported so researchers proceeded with data collection. The intent of the study was explained to the special education teachers participating in the study. The researchers explained their participation was on a voluntary basis. Consent forms were provided for parents. It took the teachers about 30 minutes to complete the form. The data were entered in an Excel file and transferred to the Orange software program through a file object. The Orange software was used to analyze the data (Figure 1). The column to be analyzed was selected by using the Corpus object. Words and word groups were parsed by using the Preprocess text object. This object separates words and word groups that have commas between them. Words and word groups were then counted by using the Word cloud object. This object counts each word and word groups that separated previous step. The data are presented in tables in the form of percentages and frequencies.

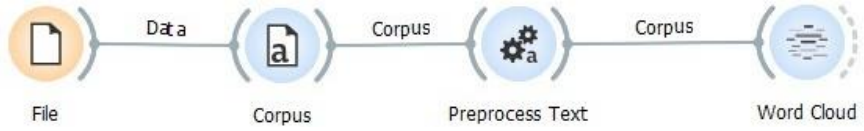

Figure 1. *Objects Used in the Orange Software*

Research Ethics

Erciyes University's ethical committee were approved the data collection procedures and the study was recruited by following the ethical standards.

3 | Findings

The information about the teachers' technological competences is presented in Table 2. Of the teachers who responded, 91% said they were technology literate while 9% said they were not technology literate. All of the teachers had at least one computer, phone or tablet. Among the teachers, 46% had all three technological devices. More than half of them (54%) used technological devices for 1–3 hours a day. In addition to that, few of the teachers (87%) had received in-service training in distance education.7

Table 2. Technological Competency

	n	%		n	%
Are you a technology literate?			Duration of your daily computer/tablet/phone use?		
No	17	9	Less than 1 hour	82	43
Yes	174	91	1–3 hours	53	28
Technological tools owned:			3–5 hours	56	29
Computer, Tablet PC, Phone	90	46	More than 5 hours	22	12
Computer, Phone	76	40	Have you received in-service training / seminars / certificates for distance education, etc.?		
Tablet PC, Phone	4	2	No	166	87
Phone (Only)	20	11	Yes	25	13
Computer (Only)	1	1			

Table 3 presents information on whether teachers developed instructional activities such as assignments, IEPs, computer/web-supported materials, educational mobile applications, printed materials, educational videos, and so on for students with special needs during the pandemic. While 21% of the teachers developed no instructional activity, 79% of them developed at least one of the following: assignments, IEPs, computer/web-supported materials, educational mobile applications, printed materials, and educational videos. The most commonly developed instructional activity was homework (34%) while the least developed instructional activity was educational videos with (1%).

Table 3. Instructional Activities Developed by Teachers for Students with Special Needs During the Pandemic

Instructional Activities	f	%
Assignments	128	34
Individualized Educational Plan (IEP)	72	19
Computer/Web-supported materials	70	18
Educational mobile application	53	14
Printed materials	52	14
Educational video	2	1
Total	377	100
	n	%
I have not developed any	40	21

In Table 4, the teachers were asked about their use of instructional technologies. 57% responded they used technology-supported ready-made instructional applications/activities; 43% prepared an online IEP; 48% used instructional activities developed in this process; and 27% taught live lessons.

Table 4. Use of Instructional Technologies

		n	%
Have you employed any technology-supported ready-made activities or applications for your students with special needs?	No	82	43
	Yes	109	57
Are you preparing an online IEP for your students with special needs?	No	109	57
	Yes	82	43
Is there any instructional activity created during this process that you use for your students with special needs?	No	100	52
	Yes	91	48
Did you teach live during the pandemic?	No	140	73
	Yes	51	27

In Table 5, teachers were asked what they thought of the EIN. While 14% of the teachers thought the EIN did not meet the needs of students with special needs, 15% thought it met their needs, and 71% thought that it partially met their needs. Of them, 13% thought it did not meet the needs of teachers, and 60% thought it partially meet their needs.

Table 5. Teachers' Opinions on EIN

		n	%
Do current applications meet the needs of students?	No	26	14
	Somewhat	137	71
	Yes	28	15
Do the applications meet your needs?	No	25	13
	Somewhat	115	60
	Yes	51	27

Table 6 shows the teachers' views on instructional activities which would meet students' needs during the pandemic. Of the teachers, 98% recommended at least one instructional activity, but 2% did not recommend any activity and pointed out that face-to-face training should be a must. It was stated by 15% of the teachers that technology-supported activities could meet the needs of students. In addition to that, the teachers shared similar opinions expressing that materials, video lessons, educational mobile applications, psychologically supportive sessions and computer/web-supported materials could meet students' needs.

Table 6. Instructional Activities to Meet Students' Needs During the Pandemic

Instructional Activities	f	%
Technology-supported activities	126	15
Technology-supported materials	118	14
Lessons with videos	114	14
Educational mobile applications	107	13
Psychologically supportive sessions	107	13
Computer/web-supported materials (software programs teaching certain content, and practice/review software programs)	96	12
Live lessons	82	10
Daily planners	75	9

Total	825	100
	n	%
None of them could meet student needs (education should only be face-to-face)	3	2

Table 7 conveys teachers' views on instructional activities that would meet parents' needs. It was argued that mostly technology-based activities (42%) would meet the needs of parents, with video lessons being the least appropriate option for parents (24%).

Table 7. Instructional Activity (Activities) to Meet Parents' Needs

Instructional Activities	f	%
Technology-supported activities	126	15
Technology-supported materials	118	14
Lessons with videos	114	14
Total	825	100

Table 8 shows the tools and instructional activities, other than the EIN, that were employed by the teachers. While 0.5% of the teachers did not use any other instructional activity, 25% of them employed educational mobile applications. Participants also reported using tools such as Zoom and Skype (18%) and resource sites (16%) for educational material development often used by the teachers.

Table 8. Instructional Activities Other than EIN Used During the Pandemic

Instructional Activities	f	%
Educational Mobile Applications	117	25
Tools Such as Zoom/Skype	87	18
Resource Sites for Developing Educational Materials	75	16
Online Educational Portals	47	10
Kits and Booklets	45	9
Online Seminars and Webinars	38	8
Guides	24	5
Online Resources of Certain Foundations, Associations and Universities	22	5
Reports	10	2
Podcasts	6	1
My Own Resources	3	1
Total	474	100
	n	%
None	1	0.50

Table 9 presents how the teachers offered educational support to their students in addition to the EIN. While 1% of the teachers did not offer any other support, 41% of them offered support by meeting with parents and 39% by sharing and tracking activities/assignments.

Table 9. Instructional Support Offered to Students Other than EIN

Instructional Activities	f	%
Meeting with Parents	162	41
Activity/Assignment sharing and tracking	155	39
Live lessons	42	11
Measurement and Assessment	35	9
Total	394	100
	n	%
None	2	1

Table 10 shows the distance education experiences of the teachers. While 17% of the teachers were not able give their students feedback, 37% were able to give feedback, and 46% were partially able to give feedback. While the proportion of teachers who were unable interact with their students in distance education was 13%, 35% of them were able to interact, and 52% were partially able to interact. While 20% of the teachers did not personalize content in this process, 29% did it, and 51% was able to do it in part. Moreover, 16% of the teachers were unable to collaborate with their colleagues, 38% collaborated, and 46% collaborated partially. As a result of this process, 69% of the teachers stated that blended education was the most appropriate method for students, while 18% stated that it was best to use the online method only as reinforcement and the rest (13%) stated that only online method was the most appropriate method. In

addition to that, 49% of the teachers thought they were not ready for distance education, while 51% of them thought they were ready.

Table 10. Experiences During the Distance Education

		n	%
Have you been able to give feedback to your students during distance education?	No	32	17
	Somewhat	88	46
	Yes	71	37
Have you been able to interact with your students during distance education?	No	24	13
	Somewhat	99	52
	Yes	68	35
Have you been able to personalize distance education?	No	38	20
	Somewhat	97	51
	Yes	56	29
Have you been able to share equally the responsibilities of instructional planning, implementation and assessment with other colleagues in distance education?	No	30	16
	Somewhat	89	46
	Yes	72	38
In your opinion, what is the most suitable method for students?	Blended (Face-to-face + Distance)	132	69
	Distance only as reinforcements	34	18
	Completely Distance	25	13
Do you think you are ready for distance education?	No	94	49
	Yes	97	51

The teachers who responded no to the question, do you think you are ready for distance education? were asked what training they would like to receive to be prepared to teach in an online setting. Table 11 presents the responses from participants. 20% requested "training on being able prepare materials needed for distance education," 21% requested "training on effective communication with students," 16% requested "training on technical infrastructure", and 16% requested "training on easier communication with parents." In addition to that, 15% of the teachers said they would feel ready if they had an e-mentor who would support them in this environment. 5% of the teachers were undecided.

Table 11. Distance Educational Courses That Were Desired

Trainings	n	%
Being able to prepare materials needed for distance education	19	20
Being able to communicate with students effectively	20	21
Being able to communicate with parents easily	15	16
Being a technology literate	7	7
Sources of Support	n	%
An e-mentor who would support in this environment	13	15
Technical infrastructure	15	16
Total	89	95
	n	%
None	5	5

In Table 12, difficulties the teachers faced in distance education is presented. The most frequent difficulties they faced were problems related to the use of technology by students, which accounted for 19%. The problems that followed were Internet-related problems with 17%, the lack of motivation of students with 16%, and the inadequacy of technological tools with 11%. The rate of the teachers who did not experience any difficulty was 7%.

Table 12. Difficulties They Experienced in the Distance Education

Sources of Support	f	%
Students' problems related to technology use	139	19
Internet-related problems	126	17
Students' lack of motivation	114	16
Inappropriateness of technological tools	79	11
Lack of experience	73	10
The mismatch between the training program and distance education	62	9
Technical support	60	8
Time consuming	47	6

Problems about assessment	32	4
Total	732	100
	n	%
I did not have any difficulties	13	7

4 | Discussion & Conclusion

This study was conducted to explore the experiences and needs of special education teachers related to distance education during the pandemic. As indicated in the results section, nearly all of the participants, K-12 special education teachers, stated that they were technology literate, noted they had at least one computer, phone or tablet, and more than half said they were using technology devices for 1–3 hours a day. These results indicate the teachers were fully ready to use technology in the pandemic because of their high awareness about extraordinary conditions that pandemic created (Alea et al., 2020). However, 13 percent of the teachers received any distance education training. Although they were willing to use technology, it was difficult for them do so. Therefore, instructors who are teaching online were feeling underprepared, discouraged, secluded, and disappointed (Simone, 2006). Nevertheless, more than half of the participants used technology-supported ready-made instructional applications and activities but only a quarter of teachers taught live lessons.

Most teachers developed at least one of the following: assignments, IEPs, computer/web-assisted materials, educational mobile applications, printed materials, and educational videos. Although this may seem favorable, it is important to conduct these instructional activities in a way to individually meet the needs of every single student. Teachers reported they were able to partially give feedback and interact partly in distance education, partly achieved customization for individual student needs, and partly collaborated with their colleagues. According to Hilli (2020), the reasons behind lack of feedback, lack of modification for individual students needs and lack of collaboration with other teachers are they are being constrained by the technology and their unwillingness of developing new teaching strategies.

Similar to literature (Mouzakis, 2008; Rivera, 2017), our study indicated that most teachers thought blended learning was appropriate for students with special needs. Blended learning provides constructive and enriching learning experience for students with special needs (Rivera, 2017). In line with this view, a trend towards hybrid as well as blended learning applications in new normal can be mentioned. The lack of e-mentoring had a big impact in for not being ready for distance education and accordingly, the teachers indicated that they would think ready if they had an e-mentor to support them in this environment. Finally, the most frequent challenge faced by the teachers in special education was the difficulty of using technology. Strengthening educational interaction and communication between learners and learners, teachers and content can play a helpful role in overcoming these limitations. Blended learning and flipped learning approaches can be used to support social learning processes. The recommendations on the basis of the results of this study are as follows:

UDL is a practice that can be useful for people with special needs that teachers can be implement during the pandemic. Vitelli (2015) claims that UDL-based instruction enhances learning outcomes of students with and without special needs. For special education teachers, a distance education model based on UDL is recommended. UDL depends on 3 basic principles: Multiple representation tools that provide a variety of ways for students to learn, multiple tools for action and expression that give students alternative ways of demonstrating their knowledge and skills, and multiple tools for interaction that enhance the interest and motivation of students and offer appropriate experiences (Rose & Meyer, 2006). Bozkurt (2020) underlines that there is a need to employ UDL principles in education by considering the needs of learners with special needs as well as those with normally developing peers. UDL principles can be employed in different ways in many areas of distance education. For example, iOS devices include numerous apps that teachers can use to create educational opportunities that are engaging, by using photography, videos, Internet access, multi-touch input, and their knowledge of the curriculum (McMahon & Walker, 2014).

It is essential to focus on positive behaviors in students with special needs, to give them reinforcing stimuli and feedback, and to support their behaviors than in normal students (Sugai & Horner, 2006). Moreover, all stakeholders must share responsibilities in order for a collaboration to succeed (Friend & Cook, 2007). Consequently, if teachers collaborate with their colleagues and share their personal experiences with each other, it is helpful for both teachers and students in this process. Based on the data, the participants were able to partially give feedback and interact partly in distance education, partly customized instruction for individual student needs, and partly collaborated with their colleagues.

Communication is a vital element of successful cooperation between family and school (Christenson, 2004; Epstein, 1995). Communication barriers restrict genuine and collaborative relationships between schools and families (Öztürk, 2017). Concordantly, 15 participants responded to the question "Having what opportunities would make you feel like you are ready for distance education?" with "Easier communication with parents." In this process, parents took on many roles. In addition to these roles, they should undertake roles directly related to learning and teaching processes of their children.

Teachers need support and in-service training provided by the Ministry of National Education. That being said, few of the participants indicated they had received in-service training on distance education. It was observed during the pandemic process that teachers had difficulties in technological competencies. In this context, it is important to integrate technological skills trainings and also technological, pedagogical and field knowledge, i.e. TPACK (Technological Pedagogical Content Knowledge) model, into teacher training. Teachers need professional development on distance education (Roberts, 2018). In this way, a contribution can be made to teachers' professional development by addressing their needs. It is clear, in line with the needs that arose within the scope of the study, professional development programs should be offered especially on distance education and use of ready-made educational materials, as well as technology-supported material and mobile application development. Teachers should also be offered coaching support for effective distance education tips, teaching live lessons, and to engage in effective parent–teacher and teacher–teacher interaction through online tools. Moreover, the EIN content should be updated according to teacher recommendations and needs (Fiş Erümit, 2021).

Teachers' inadequate use of technology and lack of knowledge on how to involve students with special needs in the course are significant barriers for distance education (Hamilton et al., 2020). Therefore, teachers should be supported by e-mentors. It was indicated also by the majority of our participants they would feel better equipped if they had an e-mentor to support them in this environment.

Future research

Although the distance education-related experiences and needs of special education teachers during the pandemic were identified in this study, future research should also include families into the equation, as the process involves families of children with disabilities. Moreover, since the pandemic is a new phenomenon, education will continue to be affected in unknown ways. In fact, the usability of online platforms with students and parents can be investigated. Online training programs can be prepared for teachers, and its effectiveness could also be assessed.

Statements of publication ethics

Authors declare that the research has no unethical problems and observe research and publication ethics.

Researchers' contribution rate

First author Elif Polat managed the entire flow of the article, study design, organized the data collection tool and data analyzing process. Second author Sinan Hopcan managed the literature searches and the data collection process. Third author Mehmet Emin Öztürk managed data analysis and in the interpretation of the results and analysis. All authors managed in the interpretation of the results and in writing of the manuscript.

CONFLICT OF INTEREST

The authors of this article declare that there is not conflict of interest.

REFERENCES

Akat, M., & Karataş, K. (2020). Psychological Effects of COVID-19 Pandemic on Society and Its Reflections on Education. *Electronic Turkish Studies*, *15*(4), 1-13.

Alea, L. A., Fabrea, M. F., Roldan, R. D. A., & Farooqi, A. Z. (2020). Teachers' Covid-19 awareness, distance learning education experiences and perceptions towards institutional readiness and challenges. *International Journal of Learning, Teaching and Educational Research*, *19*(6), 127-144.

Baber, H. (2020). Determinants of students' perceived learning outcome and satisfaction in online learning during the pandemic of COVID-19. *Journal of Education and E-Learning Research*, *7*(3), 285-292.

Bozkurt, A. (2020). Koronavirüs (Covid-19) pandemi süreci ve pandemi sonrası dünyada eğitime yönelik değerlendirmeler: Yeni normal ve yeni eğitim paradigması [Coronavirus (Covid-19) pandemic process and evaluations for education in the post-pandemic world: New normal and new education paradigm]. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi*, *6*(3), 112-142.

Bozkurt, A., Jung, I., Xiao, J., Vladimirschi, V., Schuwer, R., Egorov, G., ... Paskevicius, M. (2020). A global outlook to the interruption of education due to COVID-19 Pandemic: Navigating in a time of uncertainty and crisis. *Asian Journal of Distance Education*, *15*(1), 1-126.

Burdette, P. J., Greer, D. L., & Woods, K. L. (2013). K-12 Online Learning and Students with Disabilities: Perspectives from State Special Education Directors. *Journal of asynchronous learning networks*, *17*(3), 65-72.

Cartledge, G., & Milburn, J. F. (1978). The case for teaching social skills in the classroom: A review. Review of Educational Research, 48(1), 133-156.

Christenson, S. L. (2004). The family-school partnership: An opportunity to promote the learning competence of all students. *School Psychology Review*, *33*(1), 83.

Desforges, C., & Abouchaar, A. (2003). The impact of parental involvement, parental support and family education on pupil achievement and adjustment: A literature review (Vol. 433). DfES publications.

Epstein, J. L. (1995). School/family/community partnerships. *Phi delta kappan*, *76*(9), 701.

Evans, M. P. (2013). Educating preservice teachers for family, school, and community engagement. *Teaching Education*, *24*(2), 123-133.

Fayden, T. (2005). How Children Learn: Getting Beyond the Deficit Myth. Paradigm Publisher.

Fiş Erümit, S. (2021). The distance education process in K–12 schools during the pandemic period: evaluation of implementations in Turkey from the student perspective. *Technology, Pedagogy and Education*, 1-20.

Friend, M., & Cook, L. (2007). *Interactions: Collaboration skills for school professionals* (5th ed.). Allyn & Bacon.

Hamilton, L. S., Kaufman, J. H., & Diliberti, M. (2020). Teaching and Leading Through a Pandemic: Key Findings from the American Educator Panels Spring 2020 COVID-19 Surveys.

Hartnett, M. (2016). *Motivation in online education*. Singapore: Springer.

Henderson, A. T., & Mapp, K. L. (2002). A New Wave of Evidence: The Impact of School, Family, and Community Connections on Student Achievement. Annual Synthesis 2002. *National Center for Family and Community Connections with Schools*.

Hilli, C. (2020). Distance teaching in small rural primary schools: a participatory action research project. *Educational Action Research*, *28*(1), 38-52.

Holmberg, B. (1987). Research Review: The development of distance education research. *American journal of distance education*, *1*(3), 16-23.

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban education*, *42*(1), 82-110.

Jurriens, E. (2017). *Digital Indonesia*. ISEAS Publishing.

Karasar, N. (2005). *Scientific research method*. Nobel Publication Distribution.

Kiesler, S. (2002). *Distrubuted work*. The Mit Press.

Kmietowicz, Z. (2020). Rules on isolation rooms for suspected covid-19 cases in GP surgeries to be relaxed. *BMJ*, *368*(2020).

Lee, S., Yoo, S., & Bak, S. (2003). Characteristics of friendships between children with and without mild disabilities. Education and training in developmental disabilities, 157-166.

McMahon, D., & Walker, Z. (2014). Universal Design for Learning Features and Tools on iPads and Other iOS Devices. *Journal of Special Education Technology*, *29*(2), 39-49.

Metin, A., & Çetinkaya, A. (2020). According to Cognitive Model Possible Effects of Coronavirus Pandemic on Human Psychology.

Mouzakis, C. (2008). Teachers' perceptions of the effectiveness of a blended learning approach for ICT teacher training. *Journal of Technology and Teacher Education*, *16*(4), 461-482.

Olnes, L. (2008). Special Projects for Special People: Students with Disabilities Serve Others through Service-Learning Projects. *Teaching Exceptional Children Plus*, *5*(2), 2.

Özer, M (2020). Educational Policy Actions by the Ministry of National Education in the times of COVID-19 Pandemic in Turkey. *Kastamonu Education Journal*, *28*(3), 1124-1129.

Öztürk, M. E. (2017). IDEA and Family Involvement. *International Journal of Educational* Research Review, 2(1), 21-27.

Pınar, M. A., & Dönel Akgül, G. (2020). The opinions of secondary school students about giving science courses with distance education during the Covid-19 pandemic. *Journal of Current Researches on Social Sciences*, *10*(2), 461-486.

Pineda, V. S., & Corburn, J. (2020). Disability, Urban Health Equity, and the Coronavirus Pandemic: Promoting Cities for All. *Journal of Urban Health*, 1-6.

Rice, M. F., & Carter Jr, R. A. (2015). When We Talk about Compliance, It's Because We Lived It: Online Educators' Roles in Supporting Students with Disabilities. *Online Learning*, *19*(5), 18-36.

Rivera, J. H. (2017). The blended learning environment: A viable alternative for special needs students. *Journal of Education and Training Studies*, *5*(2), 79-84.

Roberts, J. (2018). Future and changing roles of staff in distance education: a study to identify training and professional development needs. *Distance Education*, *39*(1), 37-53.

Rose, D. H., & Meyer, A. (2006). *A practical reader in universal design for learning*. Harvard Education Press.

Rose, R. M., & Blomeyer, R. L. (2007). Access and equity in online classes and virtual schools. North American Council for Online Learning.

Simone, C. D. (2006). Preparing our teachers for distance education. *College Teaching*, *54*(1), 183-184.

Simpson, O. (2013). Student retention in distance education: are we failing our students?. *Open Learning: The Journal of Open, Distance and e-Learning*, *28*(2), 105-119.

Slavin, R. E. (1996). Research on cooperative learning and achievement: What we know, what we need to know. *Contemporary educational psychology*, *21*(1), 43-69.

Sugai, G., & Horner, R. R. (2006). A promising approach for expanding and sustaining school-wide positive behavior support. *School Psychology Review*, *35*(2), 245-259.

Sun, L., Tang, Y., & Zuo, W. (2020). Coronavirus pushes education online. *Nature Materials*, *19*(6), 687-687.

Tiene, D. (2000) Online Discussions: A survey of advantages and disadvantages compared to face-to-face discussions. *Journal of Educational Multimedia and Hypermedia*, *9*(4), 369-382.

Toquero, C. M. (2020). Challenges and Opportunities for Higher Education amid the COVID-19 Pandemic: The Philippine Context. *Pedagogical Research*, *5*(4), em0063.

Uludag, A. (2008). Elementary preservice teachers' opinions about parental involvement in elementary children's education. *Teaching and Teacher Education*, *24*(3), 807-817.

UNESCO. (2020). How are countries addressing the Covid-19 challenges in education? A snapshot of policy measures. Global Education Monitoring Reports. United Nations Educational, Scientific and Cultural Organization

Van Lancker, W., & Parolin, Z. (2020). COVID-19, school closures, and child poverty: a social crisis in the making. *The Lancet Public Health*, *5*(5), e243-e244.

Vitelli, E. M. (2015). Universal design for learning: Are we teaching it to preservice general education teachers?. *Journal of Special Education Technology*, *30*(3), 166-178.

Xiao, C. (2020). A novel approach of consultation on 2019 novel coronavirus (COVID-19)-related psychological and mental problems: structured letter therapy. *Psychiatry investigation*, *17*(2), 175.