Teachers' Opinions with Hearing-Impaired Students on Distance Learning During COVID-19[1]

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Article Info	ABSTRACT
	This research aims to determine how the education of hearing-impaired students was planned with distance learning during the Covid-19 pandemic, how education-teaching activities are carried out, and what kind of problems are encountered in this regard, according to the opinions of teachers. Phenomenology, one of the qualitative research designs, was used in this study. The participants of the research were eighteen teachers who have hearing-impaired students in their class. The data were collected in the 2020-2021 academic year with the semi-structured interview technique. Data analysis was carried out with the descriptive analysis method. As a result, it was revealed that teachers having hearing-impaired students during the COVID-19 pandemic did not have enough experience in planning the distance learning activities provided for those students, using appropriate materials, choosing teaching methods, using technology effectively, determining the appropriate measurement and evaluation method, and using the communication system preferred by the students.

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INTRODUCTION

At the end of 2019, the coronavirus, which is an epidemic of COVID-19 caused by the SARS-CoV-2 virus in the city of Wuhan, China, went down in history as the first pandemic caused by viruses (Dikmen et al., 2020). World Health Organization (WHO) declared this epidemic disease to the whole world as a pandemic due to the rapid increase in the number of COVID-19 cases (WHO, 2020). As of March 27, 2020, the pandemic has affected more than 1.5 billion students and 63 million educators in 188 countries around the world due to school closures (UNESCO, 2020). The situation revealed that knowledge and learning should be rethought, and education should be protected and transformed (UNESCO Futures of Education, 2020).

Students with special educational needs were among the most affected by the COVID-19 pandemic due to factors such as limited attention spans, need for direct physical support, and challenges in motivation and memory retention (ETF, 2020; Kurt & Kurtoğlu-Erden, 2020; Lee, 2020). Students with hearing impairment require different communication methods and hearing aids depending on the type and degree of hearing loss. It may be difficult to meet the different requirements of different communication methods, such as sign language, lip reading, and verbal communication, through distance Education (Aslan-Bağcı & Sarı, 2024). In addition, one-to-one interactive behaviors such as eye contact, joint attention, and turn-taking, which are important for hearing-impaired students, are very difficult to gain through distance education. In addition, the use of subtitle options, the use of written and visual materials, and the use of supportive materials such as simulations, videos, and graphics in distance education environments can also be turned into advantages for hearing-impaired children. On the other hand, the educational needs of hearing-impaired children and the fact that the pandemic process has made distance education compulsory have also revealed some difficulties in distance education in Turkey, such as teacher competencies, infrastructure, and material deficiencies.

Türkiye Context

With the identification of the first positive case in Turkey on March 11, 2020, several regulations have been made in health services, social life, and educational practices, which has marked the beginning of a new era. In order to reduce the spread of the coronavirus epidemic throughout the country and to minimize its possible negative effects in terms of education, schools in Turkey were temporarily closed on March 16, 2020, and that was followed by the start of distance learning across the country (MEB, 2020a). In this way, the distance learning process of approximately 18 million students and one million teachers in Turkey began (Özer, 2020). During that period, emergency distance learning applications were introduced in Turkey and other countries in order to continue learning without any interruptions. The applications introduced in Turkey were over the internet, with Informatics Network (EBA) of the Ministry of National Education (MoNE), and via television, with a series of TV channels under the name of TRT EBA TV (MEB, 2020b).

During the pandemic, students need of special education services could not receive face-to-face education. However, they also were supported through distance learning and some additional mobile applications. The actions taken for children in need of special education in that process in Turkey, which were a mobile application named "Özelim Eğitimdeyim (I am Special, I Receive Education)", a separate broadcast stream for children under special education on TRT EBA TV, and the production of a calendar named "Özel Çocuklarımızla Eğlenceli Etkinlikler Takvimi (Fun Events Calendar with Our Special Children)", were explained by the Minister of National Education in a video conference with parents (MEB, 2020c). In addition, sign language support was provided to the broadcasts on TRT EBA TV.

Current Studies

There have been studies examining those risks from various perspectives in special education in Turkey. Among them, some examined the opinions of teachers on distance learning applications of individuals who require special education (Akbayrak et al., 2021; Elçi & Nuri, 2022; Mengi & Alpdoğan, 2020; Ünay et al.,

2021), some dealt issues and suggestions experienced by the families of students with special education needs during the pandemic (Aydemir & Islam, 2023; Erdem et al., 2021; Koçbeker & Karamukulu, 2022; Köken & Sazak-Duman, 2024; Kundakçı et al., 2022; Özmete & Pak, 2022; Yazçayır & Gürgür, 2021; Yıldırım- Parlak et al., 2022), and some others focused on the opinions of both families and teachers (Şenol & Can-Yaşar, 2021; Kurt & Kurtoğlu-Erden, 2020).

On the other hand, there are also studies conducted specifically for the hearing-impaired. Hearing-impaired students have several needs in educational settings, such as maintaining eye contact, listening skills, sound localization, providing common attention, and lip reading. Literature suggests that difficulties the hearing-impaired experienced in practice due to their hearing impairments while continuing their education under the effects of the pandemic should not be ignored. In the international literature, studies examining the effects of the COVID-19 pandemic on hearing-impaired individuals, children, and their families in Ghana (Swanwick et al., 2020), investigating how the distance learning environment should be designed for hearing-impaired students and effective teaching methods in distance learning settings (Online Education Options Designed for the Deaf, 2020; Lynn et al., 2020; Makeshine et al., 2020), including suggestions for the issues perceived by the teachers at the university during the pandemic (Rapanta et al., 2020), focusing on issues and suggestions in distance learning of hearing-impaired students (de Godoi et al., 2020; Lynch et al., 2020), were detected. As for the Turkey context, only limited number of studies were detected. Accordingly, one (Karasu & Kaya, 2021) aimed to examine the distance learning studies carried out at the higher education level with hearing-impaired university students during the pandemic, whereas other researchers, such as Saydam et al. (2022) investigated the relationship between auditory-verbal performance of primary school students with hearing impairments and distance learning needs. Apart from them, the study of Kalaç et al. (2020) aiming to identify issues and come up with suggestions for all individuals with special needs in the distance learning process and including hearing-impaired students from primary, secondary, and higher education in the research, was detected.

Purpose and Significance

As a result of the literature review consisting of limited number of studies, it could be uttered that the present study might contribute to the field on distance learning of hearing-impaired students during the COVID-19 pandemic period. This research can help to deeply understand the effects of distance education on hearing-impaired students during the Covid-19 pandemic. As the most important building block of distance education during the Covid-19 pandemic, teachers can evaluate both the process, themselves and their students, revealing the needs of hearing-impaired students in distance education, the difficulties teachers experience when using educational materials and teaching methods, and the difficulties students experience in communication and social interaction. Therefore, it is thought that this research will contribute to providing a roadmap for teachers, educational policy developers and educational programmers in terms of developing effective distance education strategies for hearing-impaired individuals in future emergencies and crises (such as natural disasters and epidemics).

The primary purpose of this study;

1- To determine how the education of hearing-impaired students had been planned through distance learning during the COVID-19 pandemic period,

2- How educational activities had been carried out,

3- What kind of problems had been encountered in this regard, and

4-To provide an understanding of the education of hearing-impaired students, according to the opinions of teachers with hearing-impaired students during the COVID-19 pandemic period.

Based upon that, the study also unfolds the difficulties experienced by the students, and the roles and responsibilities of the families throughout the process. In addition, this study aims to determine the strengths and weaknesses of the distance learning services provided in the COVID-19 pandemic in terms of the education

of hearing-impaired students according to the opinions of the teachers. Besides, it also aims to come up with implications and suggestions for hearing-impaired individuals to benefit from distance learning services more effectively after the pandemic process. In the light of all these, answers to the following research questions were sought:

1. What were the experiences and opinions of teachers with hearing-impaired students during the COVID-19 pandemic period regarding the distance learning activities provided for them?

2. What were the experiences and opinions of teachers who have hearing-impaired students in distance learning activities towards students and families during the COVID-19 pandemic period?

3. In relation to the views of teachers with hearing-impaired students regarding distance learning during the COVID-19 pandemic period, what could be suggested for these students to benefit from distance learning services more effectively?

METHOD

Study Design

This study was designed and conducted using phenomenology, which is a qualitative research design. Phenomenology aims to identify the in-depth experiences and thoughts of the participants in research on a subject and to reveal their experiences and the meanings they attribute to these experiences (Creswell & Creswell, 2018; Smith & Fowler, 2009). The reason behind its use was the aim of this study, which was to investigate the views and experiences of teachers with hearing-impaired students regarding the planning of distance learning, operation of educational activities, and encountered problems during the COVID-19 pandemic.

Participants

Since the study is a qualitative research, the purposive sampling method was used in order to easily reach in-depth and useful information for the purpose (Patton, 2018). That being the case, the participants of the research consisted of eighteen teachers from different branches working at different levels, with students diagnosed with hearing-impaired in their class. The information about the gender, graduation status, branch, and education level of the teachers participating in the study is given in Table 1.

Table 1. *Demographic Information*

Teachers	Gender	Graduation Status	Branch	Teaching Level
T1	Female	Bachelor	Classroom	Primary
T2	Female	Bachelor	Classroom	Primary
T3	Female	Bachelor	Mathematics	Highschool
T4	Female	Bachelor	Hearing-Impaired	Primary
T5	Female	Bachelor	Preschool	Preschool
T6	Female	Bachelor	Special Edu.	Primary
T7	Male	Bachelor	Classroom	Primary
T8	Male	Bachelor	Informatics	Secondary
T9	Female	Bachelor	Special Edu.	Primary
T10	Female	Bachelor	Preschool	Preschool
T11	Male	Bachelor	Classroom	Primary
T12	Male	Bachelor	Classroom	Primary
T13	Female	Bachelor	Informatics	Secondary
T14	Female	Bachelor	Classroom	Primary
T15	Male	Bachelor	Special Edu.	Primary

T16	Male	Bachelor	Special Edu.	Primary
T17	Female	Bachelor	Classroom	Primary
T18	Male	Bachelor	Special Edu.	Primary

Data Collection Tools

In phenomenology studies, semi-structured interviews could enable the researcher to deepen the responses of the participants with side or sounding questions depending on the flow of the interview (Creswell, 2009; Patton, 2018). For that reason, the data of this study were collected using a semi-structured interview form developed by the researchers. The semi-structured interview form used in the research consists of the personal information of the teacher and the interview questions about the distance learning practices with hearing-impaired students.

The process of preparing the interview questions commenced by scanning the literature and coming up with draft questions in the first place. Afterward, in order to ensure internal validity, the draft questions were submitted to the opinion of three faculty members in the field of special education and reviewed by taking into account the opinions of the experts. Following that, pilot interview sessions were conducted with three teachers online, and the semi-structured interview questions had their final form through corrections that were made by taking into account the unclear responses detected in the interviews. Accordingly, the final form of the semi-structured interview form used in the main study consisted of three main questions and further in-depth ones.

Data Analysis

The data were collected between March and May 2021 by the first researcher of the study by conducting one-on-one interviews with the teachers over the phone and online for 18 to 27 minutes. The total duration of all interviews was 394 minutes, and the transcript were 108 pages. As for the qualitative data, they were analyzed with the descriptive analysis method.

After the transcripts of the interview records were made by the first researcher, the transcripts of five randomly selected interviews were checked again by the second one. After reading all the transcripts in detail by the two researchers, the data were classified in correlation with the research questions and themes in terms of the interview questions. Within the scope of the research, 68 codes were built. Thus, the research findings were subjected to descriptive analysis under three main themes and 16 categories.

Validity and Reliability

While preparing the data collection tool for the content validity of the data collection tool to be used in the research, the special education and literature on distance learning was examined, expert opinions were taken, and feedback from the pilot interviews was taken into account. Within the scope of internal validity, the researchers asked the interview questions in a clear and understandable way, collected the data in detail, and created the codes and categories separately. Within the scope of external reliability, all stages of the research were explained in detail, and all audio recordings and transcripts were kept in a way that could not be accessed besides the researchers for data reliability. By keeping the real identities of the participants confidential, participant information was provided in detail. In addition, before collecting data, the researchers asked the participants for permission to record the audio and obtained their consent. While collecting the data, the participants were informed that the confidentiality of their responses would be ensured and that they would not be shared with any person or institution so that the sincere views of the participants could be reached and reliable data could be collected.

FINDINGS

In this section, the findings of the present study are demonstrated through themes, categories, and codes. The demonstrated themes and categories can be found in Figure 1.
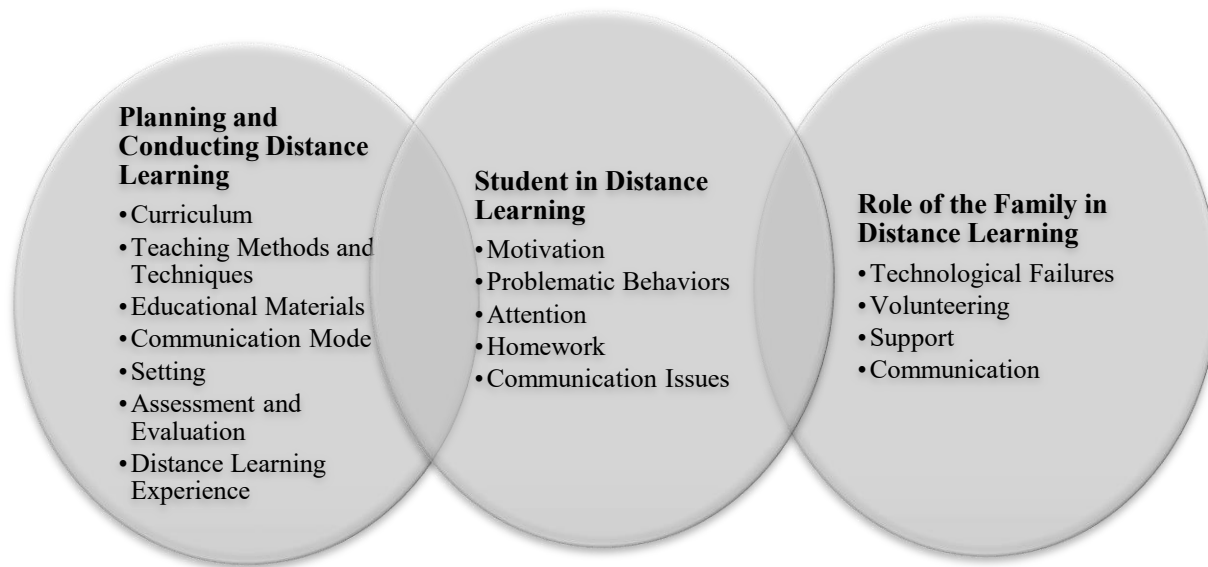

Figure 1. *Themes and Categories of the Research*

1. Planning and Conducting Distance Learning

The categories and codes belonging to the theme of planning and conducting distance learning of the teachers participating in the study are demonstrated in Table 2.

Table 2. *Categories and codes for the theme of planning and conducting distance learning.*

Category	Code	f
Curriculum	IEP	13
	Distance learning framework program for special education	1
	MoNE curriculum	2
	MoNE curriculum (by adaptation)	2
Teaching Methods and Techniques	Narration	10
	Demonstration	6
	Question and answer	3
	Direct instruction	3
	Modeling	3
	Verbal cue	1
Educational Materials	Concrete materials	5
	Worksheets	2
	Figure-picture-schema-graphic	2
	Video	5
	Web 2.0 tools	2
	Visual materials	8
	Power Point presentations	2
	Books	6
	Animations	2
	Story cards	1
	Audio materials	1

	EBA contents	1
Communication Mode	Sign language	6
	Lip reading	6
	Verbal method	5
	Natural auditory-verbal method	1
Setting	Zoom	11
	EBA	3
	UZEP	2
	WhatsApp	6
Assessment and Evaluation	Observation	4
	Project	1
	Participation	1
	Criterion Dependent Tests	2
	IEP learning outcome assessment	5
	No method used	7
Distance Learning Experience	No experience	15
	Learned within the process	5
	Have experience	3

Most of the participants responded that they use IEP for their hearing-impaired students and that it is necessary for teaching and assessment. The participants also stated that they carry out distance learning by following long and short-term goals. In addition, the participants stated that they used the goals set by MoNE when they found them appropriate for their students, that some teachers made adaptations to the goals for their students, and that they also used the Distance Special Education Services Framework Program prepared by MoNE. Some of the opinions expressed for this category are as follows:

"I used IEP. In IEP, we *have long-term goals, and under these goals, we have shorter goals related to that goal. This is how we conducted it."* (T18)

"I go according to the objectives determined by the MoNE. Since my student does not have any cognitive problems, I can even say that he is among the best in the class." (T12)

"*I looked at the student's readiness level. I took the student in the second grade. The objectives of the second year were advanced for* the *student. Therefore, I simplified them a little."* (T1)

"We applied everything *according to 'The Special Education Distance Learning Framework Program' submitted to us by MoNE."* (T2)

When Table 2 was examined, it was found out that in the category of teaching methods and techniques, the narration method was mostly preferred by the teachers in the distance learning process, and the demonstration method was the second preferred method. It was realized that methods such as modeling and direct instruction, which have been frequently used in special education, were preferred by teachers in the distance learning process, as well. In addition, it was seen that teachers use the question-answer and verbal cue techniques, which has been of the most commonly used ones in special education settings.

"I use the narration method as a teaching method in my lessons." (T8).

"The demonstration method. I used this method as it is the one ensuring active participation of the students." (T1)

"I tried to teach through modeling during distance learning." (T16)

"I preferred to apply the direct instruction method as it is more convenient for myself and the child." (T15)

Teachers stated that they prefer educational materials among materials such as visual materials, video, animation, figure-picture-schema-graphic, PowerPoint presentations, and web 2.0 tools, in which visuality is prioritized due to the learning characteristics of hearing-impaired students. In addition to this, teachers also stated that they used visual software such as Wordwall and that they used diagrams, tables, and graphs to make it easier for hearing-impaired students to learn the lessons. Some of the opinions expressed for this category

are as follows:

"Of course, I used more visual materials for my hearing-impaired student." (T5)

"I mostly used books. We progressed by doing homework from those books." (T12)

"As educational materials offer children the opportunity to learn concretely and based on experience, for example, these are paints, glues, tapes, scissors, play dough, paper clips…" (T4)

"…I taught in a way to strengthen his visual perception. I used web2.0 tools for it. Especially like Wordwall…" (T3)

"I also supported the narration with pictures, diagrams, graphics and visual tools." (T1)

"Even if he doesn't hear, I used animations that the child can at least understand when he sees it." (T17)

"…the materials I use: Educational cards, story cards, sentence forming cards, then narrative cards …" (T16)

In addition to sign language and lip reading, it was seen that verbal methods were also used in this process with students without severe hearing loss. Teachers emphasized the difficulties of communicating with sign language during distance education, the importance of gestures and mimics, and the necessity of having both the teacher's and the student's cameras on during the distance education process. Some of the teachers' views on this category are as follows:

"I can only use sign language and it was more tiring for us in distance learning. We had difficulties in distance learning since eye contact, lips, gestures and facial expressions, hand movements are very important for us..." (T2)

"Our students can actually communicate with their teachers and friends at school by lip reading. In online classes, there is no problem when we do our lessons with our camera on." (T3)

"I can communicate verbally with my hearing-impaired student." (T12)

Teachers with hearing-impaired students interviewed within the scope of the research stated that they mostly used synchronous distance learning settings such as Zoom and UZEP, while some teachers, on the other hand, were caught unprepared for this process, so they made video calls with their parents and students via the WhatsApp application and assigned homework. Some of the opinions expressed for this category are as follows:

"I started to do my lessons via Zoom in distance learning." (T11)

"I tried to continue the individualized education program that had been prepared before, via WhatsApp and calls." (T16)

"Our school continued its education through UZEP, the distance learning platform of Sakarya University. For that reason, I used UZEP in this process." (T4)

In the assessment and evaluation category, it was found out that some of the teachers did not use any method for assessment and evaluation due to their lack of experience in distance education, some teachers reported that they evaluated the student's IEP achievements, and some teachers reported that they used the observation method, which they found more appropriate for the nature of this process. In addition, some teachers also stated that they evaluated with criterion-dependent tests, projects, and class participation. Some of the opinions expressed for this category are as follows:

"I used the observation technique because it can be applied to students at all levels, that it provides an opportunity for objective evaluation, that the students are not aware of the process, that there are no time and place limits, and that it is suitable for the program." (T10)

"For example, if I gave color work to a child for one week, the next week I ask whether the child knows

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the color red or s/he can generalize the color red. After that, I make an assessment according to their language and knowledge level." (T6)

"I gave them appropriate projects so that they could reveal something concrete. That's how I did my assessment." (T8)

"In distance learning, our exams have been canceled and removed. Therefore, we assigned a grade according to the performance of the children in the lesson, depending on whether the children had attended the class or not." (T2)

In the interviews, many of the teachers also stated that they did not have experience in distance learning settings and in planning lessons in these settings, using educational materials and providing classroom management in these settings, and that they somehow were caught unprepared. However, it was seen that the teachers also found the opportunity to develop themselves throughout the process. Some of the opinions expressed for this category are as follows:

"No, we practiced distance learning for the very first time. We had no prior knowledge." (T16)

"We also had to adapt to this process because we shouldn't be left behind. In this process, we had to continue education. That's why I developed it myself." (T9)

"In fact, distance learning is our field. I can say that I had both knowledge and experience with these settings." (T13)

2. Student in Distance Learning

The categories and codes of the teachers participating in the study for the theme of student in distance learning are demonstrated in Table 3.

Table 3. *Categories and codes of the student theme in distance learning*

Category	Code	f
Motivation	Low motivation	10
	High motivation	6
	Changeable depending on the situation	2
Problematic Behaviors	Irritability	3
	Acrimonious behaviors	2
	Inability to socialize	1
	No problematic behaviors	12
Attention	Short attention span	6
	Difficulty in concentrating	11
	No problem with attention	3
Homework	Reluctance to do homework	13
	No failure in homework	3
	Family support for homework	7
Communication Issues	Not knowing sign language	10
	To be bothered by loud noise	1
	Issues with the device	8

When the opinions of the teachers in the motivation category were analyzed, it was revealed that hearing-impaired students of most of the teachers experienced low motivation in distance learning. On the other hand, the hearing-impaired students of some were highly motivated, whereas it varied for very few of them during the process. Some of the opinions expressed by the teachers for this category are as follows:

"To be honest, their motivation is generally low." (T7)

"The motivation of my hearing-impaired student was always high." (T4)

"The level of motivation varied because of connection problems, not being in the same physical place... The child already had a hearing problem. An image freezing at that moment could negatively affect his motivation." (T9)

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In the category of problematic behaviors, the teachers stated that their hearing-impaired students encountered problems such as nervousness or irritable behaviors during the distance learning process, and that not being able to socialize could also be considered as behavioral problems. Moreover, it was seen that the teachers with hearing-impaired students who had no problematic behaviors during distance learning were also in the majority. Some of the opinions expressed by the teachers for this category are as follows:

"In this process, his nervous reactions increased. Even if he couldn't speak in class, we were able to communicate somehow by writing and drawing, at least showing some objects with our hands and arms." (T5)

"Since he could not express himself in distance learning, he had more vicious behavior, I observed this." (T18)

"No, there was absolutely no change in the behavior of my hearing-impaired student. He has no behavioral issues." (T12)

In the distance learning process, the lack of a suitable environment for the student to attend the lesson at home seemed to have a negative effect on their concentration and attention span. Accordingly, only a few of the teachers mentioned that their hearing-impaired students did not have attention problems in distance learning. Some of the opinions expressed by the teachers for this category are as follows:

"I can attract the attention of the student for a certain period of time. After that he starts to get distracted." (T1)

"Actually, my student did not have an issue with attention in this process." (T4)

When the opinions of the teachers in the homework category were examined, it was found out that the hearing-impaired students of most of the teachers were reluctant to do their homework during distance learning. However, the teachers emphasized that family support was crucial in that process. Some of them indicated that they felt the great support of the parents regarding homework. Although very few, some teachers also stated that their hearing-impaired students did their homework without interruption during the distance learning process. Some of the opinions expressed by the teachers for this category are as follows:

"Like all students, he was bored. Had a hard time doing homework." (T14)

"I can say I felt the support of the family in terms of homework especially. Family support was also significant in this process." (T6)

When the opinions of the teachers in the category of communication problems were analyzed, it was unveiled that the majority of them considered not being able to use sign language while communicating with their hearing-impaired students as a communication issue. Besides, some of the teachers stated that hearing-impaired students' malfunctions or problems with their hearing aids during the distance learning process and the loudness of the ambient sounds in distance learning settings also caused issues. Some of the opinions expressed for this category are as follows:

"I don't know sign language anyway. I wish I knew it." (T5)

"The most difficult thing here is to communicate with children because, as I said, our children already have hearing aids, even when we are face to face, it was even more difficult in front of the computer while hearing our voices mechanically. Sometimes the earmold may not fit properly, for instance, the child cannot control it. Sometimes, in the family, if we do not follow it, we experience such problems because we are not with the child." (T2)

"The loudness of the surrounding sounds, that is, the absence of the class in the classroom, and the loudness of the hearing aid in the house, was an obstacle for the child to hear and understand." (T4)

3. Role of the Family in Distance Learning

The categories and codes of the teachers participating in the research related to the theme of the role of the family in distance learning are demonstrated in Table 4.

Table 4. *Categories and codes regarding the theme of the role of the family in distance learning.*

Category	Code	f
Volunteering	Reluctance to distance learning	10
	Not believing in the benefits of distance learning	9
	Finding face-to-face training more helpful	4
	Willingness to distance learning	2
Technological Failures	Connection lost	15
	Lack of equipment to attend the course	5
	Multiple children using a single device	8
Support	Reluctance to do homework	4
	Parents are concerned	8
	Parents were also challenged	7
Communication	Unable to reach the family	9
	We did not have any problems	8
	Did not attend regular meetings	2

In this category, the teachers pointed out that families were reluctant to distance learning since they did not believe that it would be beneficial, and that negatively affected them while providing distance special education services. That being the case, the teachers also pointed out that the low motivation of the families, who are the biggest supporters of the hearing-impaired students, against distance learning negatively affects their participation in courses and homework, and that reduces the expected efficiency of the learning practices. Some of the opinions expressed for this category are as follows:

"As I mentioned before, the family did not want the child to attend the distance learning course." (T1)

"Not only hearing-impaired students, but also parents do not view distance learning positively, they prefer learning to take place at the school." (T12)

"We did not encounter any major problems. Parents were very satisfied. There was no issue in distance learning classes." (T8)

The teachers indicated that there were many internet interruptions due to the lack of technological infrastructure during distance learning, that some children used the mobile phone of a family member since they did not have a computer or tablet to attend the lesson, which did not provide a healthy classroom environment. They also mentioned that due to financial difficulties, more than one child in the family had to use the same device to attend lessons, and that negatively affected the students' participation during the process. Some of the opinions expressed for this category are as follows:

"With the interruption of the Internet, our communication with the child was also cut off. Families did not have enough internet in the early days. Not every family has the same opportunity." (T13)

"We cannot teach through Zoom or EBA since they do not have tablets and computers. We only maintain them on a single phone." (T15)

"In some families, two or three children might have to do lessons from a single device, we had to plan our hours according to them." (T18)

Teachers interviewed within the scope of the study responded that families mostly supported the teacher and their children in the distance learning process by doing their best. Teachers emphasized that homework is important for achieving the goals of education during distance education. Some of the opinions expressed for this category are as follows:

"The parent, who has a hearing-impaired child, supported her child so that she would not fall behind

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in her education and asked me for help during distance learning." (T2)

"In this process, turning learning outcomes into behaviors could only be possible through cooperation with the parents. I was giving assignments to my student to reinforce what I had taught through Zoom. However, the parent was reluctant to make him do homework." (T4)

In the interviews, most of the teachers pointed out that they had more difficulty in reaching the families in distance learning than face-to-face education, mostly due to the internet quota and interruption or the lack of available times. Apart from that, some unfolded that they organized regular online meetings with their parents, but they faced the participation problem of the parents, while others expressed that they did not encounter any issues in communicating with the parents. Some of the opinions expressed for this category are as follows:

"The parents were incompetent. I couldn't reach the mom and dad." (T5)

"During the pandemic, I held online meetings every two weeks with all the parents, but the parents of my hearing-impaired student could not attend these meetings regularly." (T7)

"I did not have a problem with the family, on the contrary, they were very diligent and self-sacrificing." (T2)

DISCUSSION

Examining the opinions of teachers who carry out distance learning activities with hearing-impaired students, the present study reached three themes, which were the planning and execution of distance learning, the role of students in distance learning, and the role of the family in distance learning. Furthermore, it was found out that teachers mostly used IEPs prepared before the pandemic for hearing-impaired students in distance learning, whereas some of them used the general education curriculum with or without adaptation. Accordingly, it could be uttered that the result of this study is parallel with the research findings made as a result of other research (Mengi & Alpdoğan, 2020; Elçi & Nuri, 2022). About the applications used during distance learning, it was revealed that the teachers used the Zoom application most of the time, as well as the EBA and WhatsApp applications (e.g., Karasu & Kaya, 2021; Mengi & Alpdoğan, 2020; Ünay et al., 2021). It was also unveiled that teachers in distance learning were inexperienced and mostly preferred visuals. As for the teaching methods, it was seen that they mostly used narration and demonstration. On the other hand, some teachers did not use any method for evaluation, whereas some used alternative measurement and evaluation methods such as observation and projects. Among the communication methods, sign language, verbal method and lip reading were preferred according to the wishes and needs of the hearing-impaired students. Again, all those results were found to be in line with the literature (e.g., Kalaç et al. 2020; Kurt & Kurtoğlu- Erden,2020; Lynn et al., 2020; Makeshine et al., 2020; Mengi & Alpdoğan, 2020).

Similar to the studies of de Godoi et al. (2020) and Karasu and Kaya (2021), it was revealed in this one that hearing-impaired students had difficulty in concentrating during distance learning activities due to their low motivation and reluctance to do homework. Regarding the problematic behaviors, it came to light that hearing-impaired students generally did not have one. However, when they could not express themselves in distance learning students, they got nervous and irritated. Besides that, most of the communication problems were caused by the teachers not knowing sign language and not being able to immediately intervene in the problems related to the hearing-impaired student's device, which are also compatible with the literature (e.g., de Godoi et al. 2020; Karasu & Kaya, 2021; Kalaç et al., 2020).

In the same vein as Ünay et al. (2021) and Koçbeker and Karamuklu (2022), it was found out in this study that parents were reluctant towards distance learning as they were concerned that it was not sufficient for their children. Nevertheless, they still supported the teachers for the sake of their children's education during the whole process (Köken & Sazak-Duman, 2024). Moreover, it was unfolded that different environmental and economic conditions of the students such as internet interruptions and having no or limited

number of devices to participate in distance learning at home prevented access to them (Köken & Sazak-Duman, 2024). Additionally, the fact that the way to reach the parents was via mobile phone or the internet made it challenging to maintain contact with them, which is also along the lines of the literature (e.g., Erdem et al. 2021; Guernsey et al., 2020).

CONCLUSION

As a result of this study, overall, the findings revealed a significant lack of teacher preparedness in adapting content and methods for hearing-impaired students in a remote learning context. The results of the study revealed that the education of hearing-impaired students was negatively affected during the Covid-19 pandemic period and that this situation requires action related to the dimensions of teachers, families, curriculum, environment, and MoNE.

In this *direction, for practice,*

- Instructional adaptation should be made for the active participation, motivation and academic success of hearing-impaired students in distance education.

- Simultaneous subtitle support, visual material uses, and sign language support, depending on the communication method preference of the hearing-impaired student, will provide important support. In this regard, MoNE should provide opportunities such as more content, resources, and access to lecture videos for hearing-impaired students.

- It is another issue that these students have unequal opportunities regarding the internet, technological devices, etc. to participate in distance learning practices. Here, it is once again MoNE that should provide services for the solution of such issues.

- Trainings that can support teachers in both technological and instructional adaptations should be organized so that they can carry out distance special education services more easily and efficiently.

- In addition to that, family education seminars should be organized so that families, who are the biggest supporters of teachers in this process, could support their children in both psychological and educational aspects.

Suggestions *for further research,*

- Research focusing on the experiences of parents with hearing-impaired children during the Covid-19 pandemic process can be planned.

- Research can be designed to comparatively analyze the effects of teachers on their typically developing peers and hearing-impaired students during the distance education process during the Covid-19 pandemic.

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APPENDIX-A

INTERVİEW QUESTİONS

1. What kind of distance education plan did you make for your hearing-impaired student in your class during the COVID-19 pandemic? Can you provide detailed information?

> Prompt 1: Can you evaluate the education program you used in distance education (achievements, suitability for level, and student characteristics) in terms of your hearing-impaired student?

> Prompt 2: What teaching methods and educational materials did you use in the distance education process for your hearing-impaired student?

> Prompt 3: Did you feel the need to change the communication method you used for your hearing-impaired student in distance education?

> Prompt 4: What are the measurement and evaluation methods you used in distance education for your hearing-impaired student?

2. How did you carry out the distance education activities you planned for your hearing-impaired student/students in your class during the COVID-19 pandemic, and what were the problems you encountered? Can you provide detailed information?

> Prompt 1: Did you have any knowledge about distance education?

> Prompt 2: How were the behaviors of hearing-impaired students and parents in distance education? What were the perspectives of hearing-impaired students and parents on distance education? Did you experience any problems in this regard?

> Prompt 3: Did you feel competent about the technologies you used in distance education? Did you have any previous knowledge or experience in this regard?

3. What was the students' motivation in the distance education you provided for hearing-impaired students?

> Prompt 1: Did any differences occur in the behavior of hearing-impaired students during distance education lessons? Did you observe any behavioral problems during this process?