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Preschool Teachers' Views on the Use of Technology during Distance Learning

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Abstract: The distance learning process has now become important with current pandemic. Teachers' belief in technology and their skill to use technology are quite important to achieve successful and effective distance learning. Therefore, preschool teachers' views on the use of technology during distance learning were asked in this research. For this purpose, this research used phenomenological design, one of the qualitative research designs. The working group of research consisted of 50 preschool teachers. A semi-structured interview form was used as a data collection tool. The data obtained from the research were analyzed by the content analysis. As a result, according to the research, preschool teachers used technology for personal and professional purposes, and delivered their view on the negative and positive aspects of distance learning. The study concludes with a discussion of what the findings might mean for current policy and practice. Directions for future research and recommendations are discussed.

Keywords: Preschool, preschool teacher, technology, distance learning, pandemic

Okul Öncesi Öğretmenlerinin Uzaktan Eğitimde Teknoloji Kullanımına İlişkin Görüşleri

Öz: Günümüzde pandemi ile birlikte uzaktan eğitim süreçleri önem kazanmaya başladı. Uzaktan eğitimin başarılı ve etkin olabilmesi için öğretmenlerin teknolojiye ilişkin inançları ve teknoloji kullanma becerileri oldukça önemlidir. Bu yüzden bu araştırmada okul öncesi öğretmenlerinin uzaktan eğitim sürecinde teknoloji kullanımına ilişkin görüşlerine başvurulmuştur. Bu amaçla araştırmada nitel araştırma desenlerinden fenomenoloji (olgu bilim) deseni kullanılmıştır. Araştırmanın çalışma grubunu 50 okul öncesi eğitim öğretmeni oluşturmaktadır. Veri toplama aracı olarak yarı yapılandırılmış görüşme formu kullanılmıştır. Araştırmada elde edilen verilerin analizi için içerik analizine başvurulmuştur. Araştırmanın sonucunda okul öncesi öğretmenlerinin teknolojiyi kişisel ve mesleki amaçlarla kullandıkları, uzaktan eğitim sürecinin olumlu ve olumsuz yanlarından söz ettikleri görülmüştür.

Anahtar sözcükler: okul öncesi, okul öncesi öğretmeni, teknoloji, uzaktan eğitim, pandemi

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Introduction

Technology is used in the areas of education as well as other areas of life (DeGennaro, 2008; Vaala & Bleakley, 2015). Inclusion of technology in education in functional terms is more important than its introduction into schools as a "product" (Bajovic, 2018). Technology needs to be used based on the objectives of school, parents, students and teachers – the elements of education – and utilized actively during the learning process (Bingimlas, 2009). Use of technology for education has been increased as the use of internet has become widespread, learning has become fun with digital tools, and they allow users to interact and actively share the contents (Rollett et al., 2007). With the increased use of technology, there is a need now to investigate its impact on the learning process (Gök et al., 2011).

One of the major factors for technology use that determines the quality of education in the preschool education is the qualification of teachers, i.e., how functional teachers can use technologic tools during the learning process (Ertmer & Leftwich, 2010). There is a new generation now called "digital natives" that use technology at any time of their daily life (Bennett et al., 2008). For this reason, teachers need to learn technology software, applications and programs and how to use them at a level to provide benefit to education (Voogt & McKenney, 2017). To achieve high-quality education delivered by technology, teachers must follow well the technological tools and their reflection on the learning (Keengwe et al., 2008). It is known that using technology in the class is an effective method to support preschool children's education (Mumtaz, 2000). In addition, use of technology can be considered to allow visual and deep learning, to enhance attention to learning process, to contribute to retention of learning, and to improve the academic success (Flewitt et al., 2015; Fullan & Langworthy 2014; Hinostroza et al., 2011). Therefore, teachers should utilize various software and applications during the activities of preschool education and the implementation processes (Kol, 2012). However, use of technological tools by teachers is associated with their knowledge of technology, their skills, and their attitude towards technological tools (Abbitt, 2011; Bozkurt & Johnston-Wilder, 2011; Njiku et al., 2019; Otterborn et al., 2019). For example, some teachers and school principals believe that computers are harmful and useless during the learning process (Thelmadatter, 2007), whereas some teachers consider that technology is important and digital media should be integrated into early childhood education classes (Alelaimat et al., 2021; Demetriou & Nikiforidou, 2019).

Effective use of technology by teachers during the education process is directly proportional to their knowledge on how to use technology (Strawhacker et al., 2018). Technology is constantly changing and innovating over time. Therefore, education will be more efficient if preschool teachers keep up with this process (Meneses et al., 2012). Teachers should pursue all of the latest developments and be technology literate. Thus, use of technology for teacher education has become prominent (Lawless & Pellegrino, 2007). It is considered that skills for technology literacy can be improved by the in-service training programs, seminars and professional support to be provided to preschool teachers (Oliemat et al., 2018; Uyanık Aktulun and Elmas, 2019). Because the major barriers to use of technology by teachers include lack of experience to learn technology, lack of confidence, and regarding themselves as unqualified for use of technology (Bingimlas, 2009; Blake, 2007; Mumtaz, 2000; Tondeur et. al, 2013).

New and different practices have emerged in education during the ongoing pandemic. One of these new practices introduced into the field of education is to give weight to distance learning (Coban, 2020). Distance learning has given an alternative dimension to education

process by the widespread use of information technology (Demir, 2015). Moore and Kearsley (2005) defines distance learning as an arrangement that requires use of various technologies with different course designs from different environments where teachers and students are located.

Many countries have initiated distance learning process due to coronavirus pandemic that has a severe impact on the entire world (Bao, 2020). Although distance learning was not an education model that was not used intensely prior to pandemic, it has been widely used at all levels from preschool education level to university after the pandemic (Brem et al., 2021). Several countries have made considerable investments in distance learning activities for their citizens. In this way, they have endeavor to ensure equal opportunities in education for students and teachers that have varying difficulties and financial impossibility (Kırık, 2014). However, the distance learning process may have several disadvantages particularly for children who have a family with low socioeconomic status (Hansen & Reich, 2015). Difficulty in access to technologic tools, insufficient infrastructure and lack of skills to use technologic tools may decrease the efficiency of distance learning process (Alsuwidan, 2018; Taghizadeh & Hasani Yourdshahi, 2020).

As the distance learning has become a necessity, qualification of teachers to use technology has been assessed (Merç, 2015). In addition to qualification of teachers to use technology, it is considered that the system needs enhancement in terms of infrastructure, contents, quality and design (Alsuwidan, 2018). It must be ensured that students from any level and teachers from any branch have an access to distance learning facilities as well as to qualified education contents (Can, 2020). To achieve an effective distance learning, the education programs designed must meet the requirements of children and conform to curriculum (Kildare & Middlemiss, 2017; Sayan, 2016).

Previous researches (Clarke, Abbott, 2016; Cox & Abbott, 2004; Ertmer & Leftwich, 2010; Gök, 2010; Neumann & Neumann, 2017; Roberts-Holmes, 2014; Sak et al., 2016; Sun, 2020) demonstrated that use of technology for learning activities supported fun learning of children and drew their attention and interest. The importance of technology in education is revealed by the fact that it is a contributing factor for increased interaction in class, allowing activities to be diversified, providing support to learning skills, and recognizing the benefits of technology by children (Çiçekli, 2014; Demir, 2015; Gök, 2010; Lynch, & Redpath, 2014; Sayan, 2016; Taghizadeh & Hasani Yourdshahi, 2020). Use of technology for early childhood education have been so increased that preschool teachers had to include technology in their activities (Madanipour & Cohrssen, 2020). Furthermore, Sayan (2016) indicated that effective and proper use of technology is more important than use of technology for preschool children. There is a considerably high number of teachers who use technology only for downloading ready-to-use plans, presentations and prepared materials.

In the literature, there is limited research on the use of technology by preschool teachers during the COVID-19 pandemic. This study aimed to ewplore preschool teachers' views on the use of technology for distance education conducted periodically in Turkey over the past two years, and to offer solutions to what is needed to improve negative factors. The purpose of this study was to determine the views of preschool teachers on the use of technology during the distance learning. For this purpose, the following questions were sought :

- What is the view of preschool teachers on the technology?

- What are the factors affecting preschool teachers' choice of technological tools?
- What is their view on the use of technology during the distance learning process?
- According to preschool teachers, what are the contributions of technology use to children's education in the distance education process?
- According to preschool teachers, what are the harms of using technology in the distance education process?

Method

This section of research contains the research model, working group, data collection tool, and data collection and analysis.

Research Model

This is a qualitative study performed to examine the use of technology by preschool teachers during the distance learning process. A phenomenological design was used for this research. A phenomenological study presents commonality of experiences of several individuals regarding a phenomenon or concept (Creswell, 2013). Johnson and Christensen (2014) state that phenomenological studies aim to develop a perspective on the subject by considering the experiences of the participants. In this study, it is aimed to investigate the opinions of preschool teachers who have experienced the distance education process at least once about the use of technology. Since it focuses on experiences, it is thought that the most appropriate design for research is phenomenology.

Participants

The purposive sampling method was used for choosing members of working team for the research. Accordingly, the working group consisted of 50 preschool teachers who were still teaching through distance learning. Participants were willing to have an interview and assured that obtained data would not be used for any purposes other than this research.

The age, education level, studied undergraduate program and years of seniority of participants within the working group were checked. Of the participants within the working group, 1 had an associate's degree and 49 had a bachelor's degree. Of the preschool teachers, 13 were between the age of 21 years and 25 years, 25 were between the age of 26 years and 30 years, 5 were between the age of 31 years and 35 years, 6 were between the age of 36 years and 40 years, and 2 were over the 50 years of age. The average age of preschool teachers in the research was 28.54 years. In the distribution of years of seniority of preschool teachers, 36 had years of seniority 1 to 5 years, 10 had years of seniority 6 to 10 years, and 4 had years of seniority 11 to 15 years. The availability sampling was chosen for the distribution of teachers by cities, so the teachers usually worked in Şırnak, Gaziantep and Ankara province.

Data Collection Tool

A semi-structured interview form was used as data collection tool. interviews that allow the interviewer to go beyond written questions are semi-structured interviews (Lune & Berg, 2017). The semi-structured interview form was developed in accordance with information in the literature and the research questions to compare the results. The first section of interview form contains demographic information and consent of participant, and the second section contains the questions. The first section includes 5 questions on the demographic information about preschool

teachers participated into the research. The second section includes a total of 9 questions on the view of preschool teachers on the technology, positive and negative factors affecting distance learning process, the internet tools used, and benefits and harms of technology. Three academic members expert in their field were contacted to enhance the content validity of interview form. The interview form was corrected and finalized in line with the expert's opinion.

Data Collection

The research data were collected from participants via interviews. It is easier to record data during the computer-aided interviews. A face-to-face interview presents different risks to health during the pandemic. Therefore, computer-aided interviews were utilized. Of the interviews, 22 were conducted via zoom, 17 were conducted face-to-face, and 11 were conducted via WhatsApp. It took approximately 15-20 minutes to have an interview. The voice was recorded on the system with consent of participants and then the sound recording was decrypted.

Validity, Reliability and Ethical Considerations

A report of Social and Human Ethical Sciences Commission of Van Yüzüncü Yıl University was delivered prior to collection of research data. The opinion of two expert academic members was obtained in each step of research in order to improve the internal consistency of research. During the data collection, participants were informed that data would only be used for this research and any personal data would be kept confidential. Also, participants were already informed that their voice would be recorded, and they provided a consent. The questions raised by the participants and the concerns they might have in their mind were responded before and during the interviews in order to ensure safety of preschool teachers and to avoid any uneasiness they might experience. So, it was ensured that data obtained reflected the actual state. The sound recording of interviews and transcripts were coded as T1, T2… T50 instead of using their names. The researchers conveyed the findings to the reader without adding their own comments to the data obtained. This is achieved by presenting the findings obtained with the direct quotation method.

In order to improve the internal reliability, two researchers conducted coding and checked the consistency percentage. In addition, transcripts, themes and coding were stored by two researchers to improve external reliability. Data were collected from 50 participants for the data of research, and the participation rate was deemed adequate as it was considered that participation rate was enough to achieve data saturation, and it would repeat itself thereafter.

Data Analysis

The collected data were then analyzed and interpreted. The data were collected by the use of semi-structured interview technique, face-to-face interview and computer-aided interview, and were analyzed by the content analysis method. The content analysis technique was used for the data analysis. The content analysis is a procedure where materials and documents obtained verbally or in writing were systematically and objectively reviewed (Yıldırım and Şimşek, 2013).

The participants were coded as T1 (preschool teacher) in order to comply with confidentiality of interview. The voice recording of interviews with preschool teachers in this study was transcribed. The transcripts were read by two researchers for several times to determine the theme, sub-theme and codes. The coding was carried out independently by two researchers, then the codes were compared and the coefficient of agreement was calculated to determine whether there were any differences between the coders.

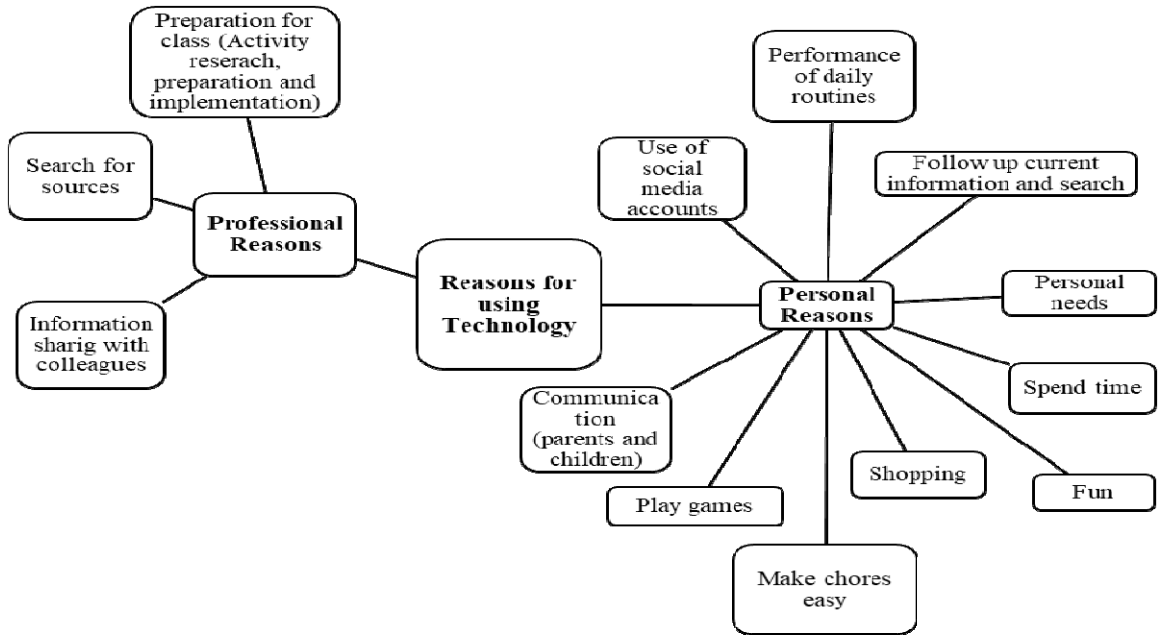
The coefficient of agreement was determined by the percent agreement formula developed by Miles and Huberman (1994) (Akt. Altunay et al., 2014). Reliability = Number of Agreements / (Number of Agreements + Number of Disagreements) Reliability = 0.9. A high inter-coder rate indicated that results were reliable. The coders arrived at an agreement on the inter-coder disagreements.

Findings

In this section, the views of preschool teachers on the use of technology in the distance education process are presented. The findings are presented using five figures.

Figure 1

Reasons for use of technology by preschool teachers



In Figure 1, personal needs (*n*=57) had the highest rate for use of technology by preschool teachers. The personal reasons for use of technology by preschool teachers included making chores easy, communication, use of social media accounts, fun spending time, performance of daily routines, needs, shopping, following up current information, and search. Some commented:

"*I use it in any areas of life. In the simplest term, I look at my clock when I wake up in the morning to check the time*".(T9)

"*Actually, I use it in any area of my life, from transportation to communication, making daily life easier to speeding up my things, so technology is now at the heart of my life in any step*". (T16)

The preschool teachers reported that one of the reasons for use of technology was the professional reasons (*n*=39). The professional reasons expressed by the preschool teachers included activity search, preparation and implementation. Comments included:

"*I rather use it in areas related to my job. Especially, I use it in areas such as searching for preschool activities, games for children, and songs*". (T28)

"*Right now, I use it as the basic building block of education during the distance learning process because anything happens on the internet or via technological tools. Our communication has turned into technology*". (T11)

"*During the distance learning process, I prepare videos or create classes on EBA or via zoom*". (T18)

Establishing communication (*n*=10) was another reason for use of technology by the preschool teachers during the distance learning process. The reasons why preschool teachers used technology for communication included communication with children and communication with parents. As related to teachers, some said:

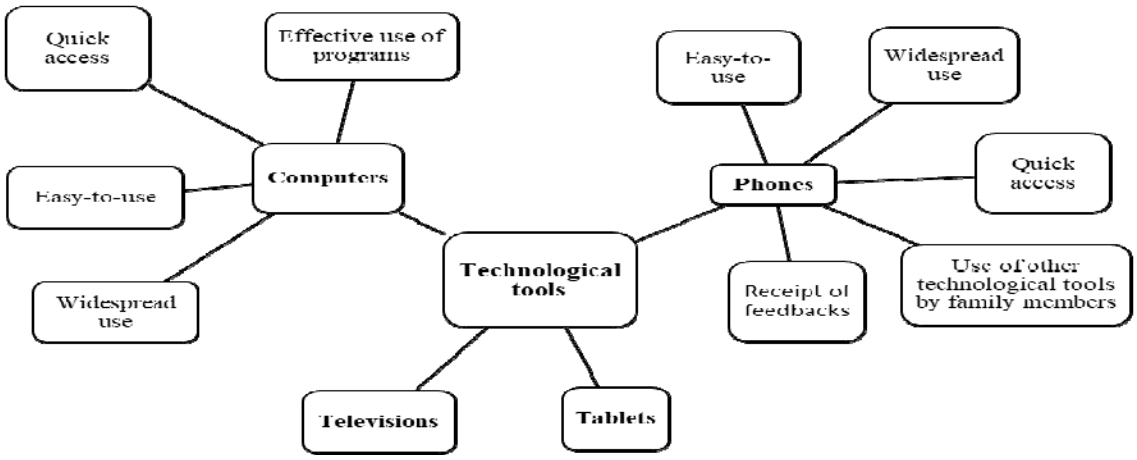
"*I use WhatsApp even for the communication with parents and communication with children. Well, I could say I make normal phone class to children on the telephone". (T36)*

"*I use WhatsApp to communicate once or twice a week, or I make voice calls to children for communication". (T41)*

Personal reasons (*n*=2) were also a reason for use of technology by the preschool teachers during the distance learning process.

Figure 2

Technological tools chosen by the preschool teachers



In Figure 2, the most preferred technological tool by the preschool teachers was the computers (*n*=41) during the distance learning process. The reasons stated by the teachers for choosing computer included easy-to-use, effective use of programs, quick access, and widespread use. Comments of some teachers included:

"*Computers are easier to use, for example, it is easier to open a page, open pages on the background, or send links to children, and view children together. Therefore, I use a computer*". *(T34)*

"*It is easier to get an access to programs we prepare on the computer. Therefore, I prefer computers". (T25)*

The preschool teachers also stated that they chose phones (*n*=33) during the distance learning process. The reasons for choosing phones by the preschool teachers included easy-to-use, widespread use, quick access, use of other technological tools by family members, and receipt of feedbacks. Comments included:

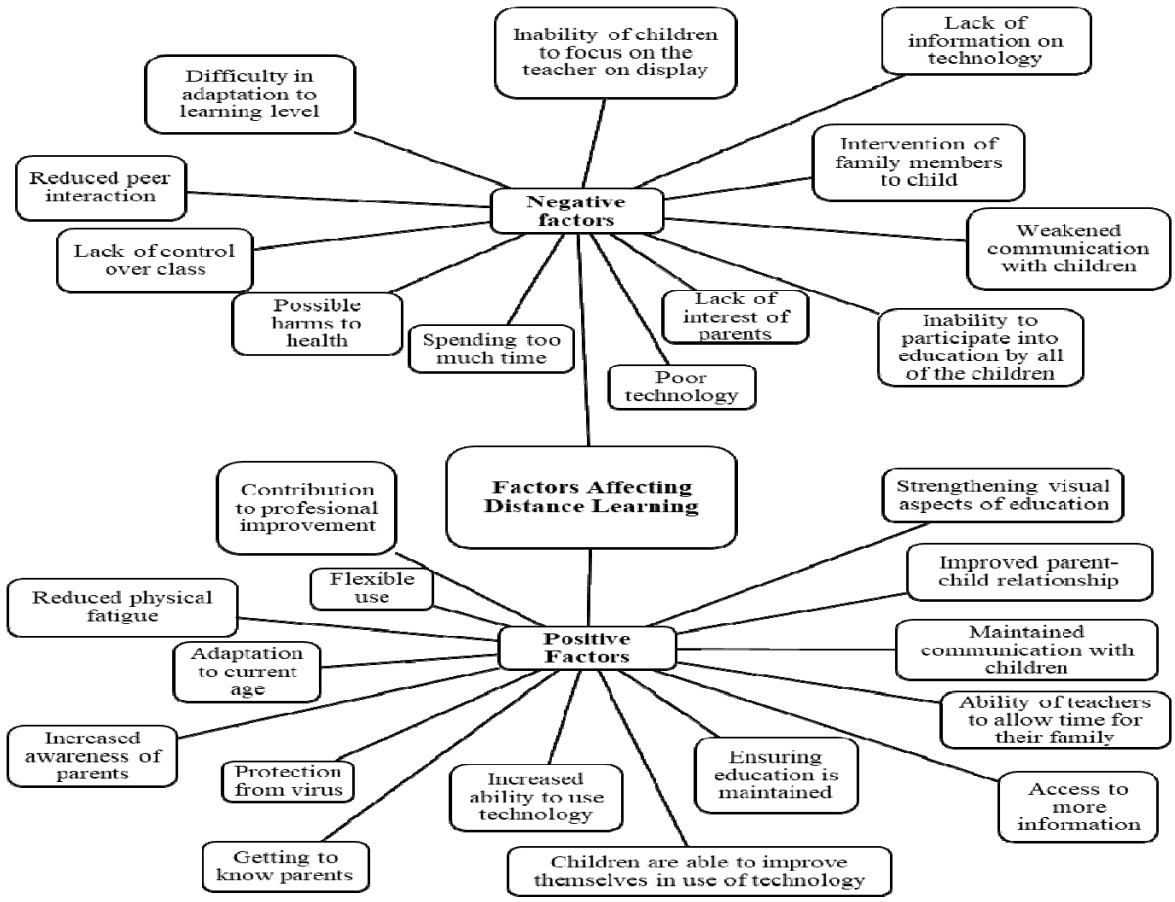
"*It's both more practical to use it and everybody uses it, also it is quicker to reach the other person*". *(T5)*

"*For me, it's easier to search for examples of activities by telephone on the social media.*" *(T13)*

The preschool teachers reported that they chose tablet computers (*n*=2) and television (*n*=1) among the technological tools other than the computers and telephones.

Figure 3

Factors affecting distance learning process



In Figure 3, the factors affecting use of technology during the distance learning process were mostly negative factors (*n*=89) as stated by the preschool teachers. The negative factors

affecting use of technology during the distance learning process, as reported by the preschool teachers, included poor technology, inability of children to focus on the teacher on display, inability to participate into education by all of the children, lack of interest of parents, weakened communication with children, intervention of family members to child, lack of information on technology, social-emotional development, lack of control over class, difficulty in adaptation to learning level, reduced peer interaction, possible harms to health, and spending too much time. The followings are citations from statements of teachers:

"*…There are breaks in the internet connection, reconnection is a problem, one student gets disconnected, get them connected again, problems like that. Then, we are disconnected in the middle of an activity. There is no infrastructure, no smart phones, no televisions and so on. Most of the time, children have no computers or tablets, they try to connect by telephone, by that tiny thing. There are such problems though". (T34)*

"One of the major disadvantages brought by technology is that children cannot socialize, and unfortunately, we push them to individuality again". (T45)

"There are times when internet infrastructure is insufficient. Although we can have online classes, children get distracted anyway. We increase the class time from 20 minutes to half an hour or thirty-five minutes after a while, but children cannot bear it. They get distracted....". (T47)

The preschool teachers reported factors affecting use of technology during the distance learning as positive factors (*n*=58). The positive factors that affect technology use by the preschool teachers during the distance learning included allowing time for the family, ability to access more information, flexible use, and contribution to professional improvement. In addition, the positive aspects of technology use were reported as less physical tiredness, strengthening visual aspects of education, increased ability of using technology, and adaptation to current age. The other positive factors included improved parent-child relationship, increased awareness of parents, ensuring education is maintained, protection from virus, ability of children to improve themselves in use of technology, maintained communication with children, and getting to know the parents. Comments included:

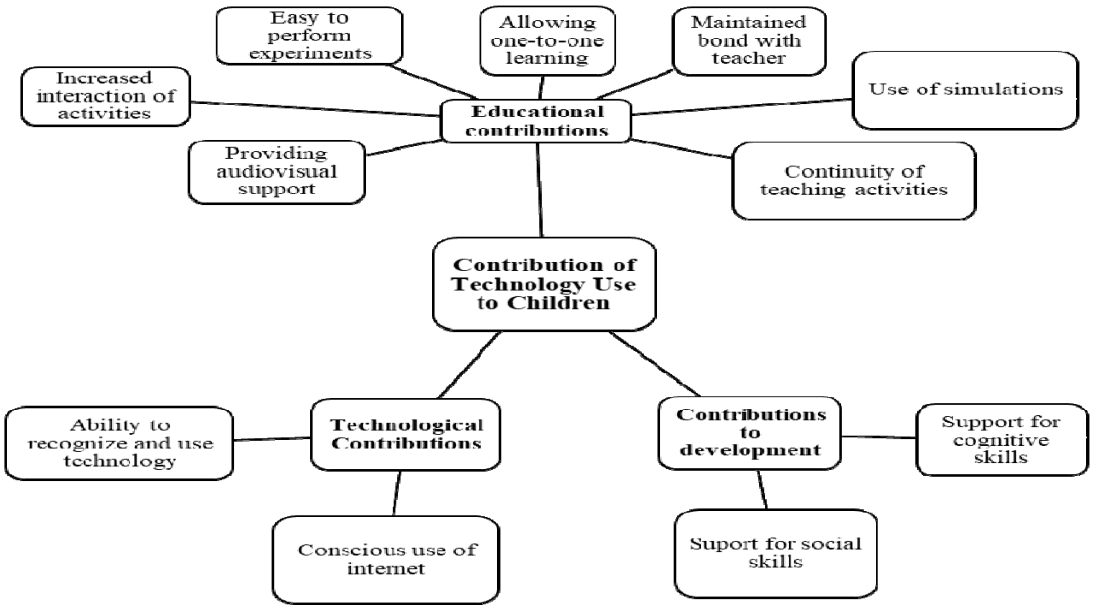
"… I could say it provides an advantage in terms of health of children and our own health. It is an advantage to us to have this communication rather than being face-to-face, physically closer to each other" *(T14)*

"I think that if we look it from the perspective of children "Wow, there is the teacher there, telling me something, we are not together but I'm able to do the activities online, I can play games, listen to music", so an awareness of such things have been created". (T16)

"Involvement of parents, I mean those parents are able to play an active role in this process. It's really good. They are able to directly communicate with their children, or they can see what their children do". (T32)

Figure 4

Contribution of technology use to children during the distance learning process



In Figure 4, use of technology made a major contribution to children in the field of education (*n*=33) as reported by the preschool teachers. The preschool teachers reported educational contributions of use of technology as continuity of teaching activities, maintained bond with teacher, use of simulations, allowing one-to-one learning, increased interaction of activities, providing audiovisual support, and easy to perform experiments. One teacher commented:

"... If there wasn't technology during the distance learning, we would never be able to communicate with those children. At least, we have been able to reach each of them once through technology, and we have carried out activities we want to provide with the support of parents". *(T5)*

The preschool teachers reported contribution of use of technology to children as the technology-based contributions (*n*=13). According to preschool teachers, contributions of use of technology to children included ability to recognize and use technology, and learning conscious use of internet. One teacher commented:

"The technology is necessarily in the center of their life just as we have technology everywhere at our homes, therefore they have learned to recognize and use this technology a little bit more for different functions". (T16)

The preschool teachers indicated that use of technology contributed to development of children (*n*=6). According the preschool teachers, its contributions to development included support for cognitive development, support for social skills, and maintained relationship with friends. Comments included:

"…They don't sit next to each other in the distance learning system. They all try to make their voice heard. I think this is one of the major positive effects. I mean that they want to get together and act together despite being distant to each other. (T45)

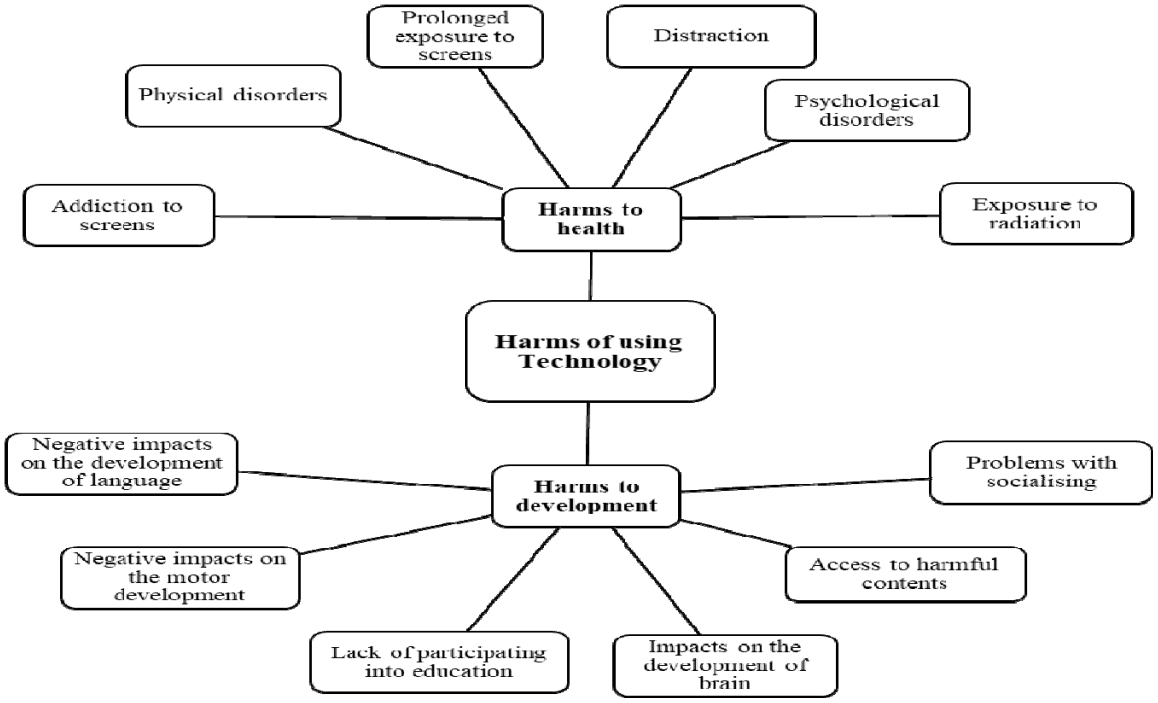
"I think that technology contributes individual development, in other words, cognitive development of children. Well, what is that then? In my opinion, it contributes to cognitive area in terms of comprehension, learning concepts, ability to analyze what is see, re-practicing core skills, in other words, putting into practice..." (T47)

Some of the preschool teachers pointed out that use of technology did not contribute to children (*n*=7).

"I am among those who think that it makes no contributions at all. I consider that it would make preschool children addicted to technology and do more harm to them. I think that their auditory perception as they are exposed to images too much". (T34)

Figure 5

Harms of using technology



In Figure 5, the preschool teachers reported that technology caused harm to human health (*n*=54) at the most during the distance learning. According to preschool teachers, harms of using technology to health included addiction to screens, physical disorders, distraction, prolonged exposure to screens, exposure to radiation, and psychological disorders. Comments included:

"*Children's eyesight deteriorates, and the radiation from the computers in the environment really affects children, therefore, children and teachers both have headaches or similar health problems. And as they have to sit for a long time, they may have joint pain or injuries*". (T50)

"…They will get addicted to telephone too much, therefore they will want to watch or play other videos, cartoons or games on the telephone. These are the harms it may cause". (T41)

The preschool teachers indicated that use of technology caused harm to development (*n*=28). They also reported that use of technology affected social skills, provided access to harmful contents, and had negative impacts on the language, motor and cognitive development. One teacher commented:

"… It causes many things, for example, they cannot socialize, I mean, they don't get the chance to build an individual relationship with others, they cannot catch each other's eye…" (T32)

Discussion and Conclusion

This research aimed to present preschool teachers' view on the use of technology during the distance learning process. The reasons why interviewed preschool teachers used technology during the distance learning process included personal reasons as well as professional reasons as seen in some of answers. The principal personal reason for use of technology by the preschool teachers was the need for communicating with their family or friends. The other personal reasons of preschool teachers included access to social media accounts, following up-to-date information, and ability to search for various subjects. In addition it was reported that media tools were used to save time on chores, watch various programs and TV series, perform daily routines, do shopping, make use of leisure times, and meet the needs. The professional reasons for using technology by the preschool teachers included searching for activities, planning, generation of materials, and application. The teachers indicated that they used technology to maintain practicing during the distance learning process, search for recourses for the activities, make preparations for the class, and exchange information with colleagues. Karaca and Aktaş (2019) reported that teachers used Web 2.0 tools to communicate, deliver lessons, obtain information on lessons, and make searches. However, Gill et al. (2015) concluded that internet and computer technologies were not adequately used during the education process. This might be due to teachers' belief that traditional methods and materials used for teaching are more useful than the digital methods and materials (Lindahl & Folkesson, 2012).

It was concluded that the commonly used technologic tool by the preschool teachers during the distance learning process was the computers. However, Taghizadeh & Hasani Yourdshahi (2020) reported that teachers had limited access to computers. The reasons for using a computer by the preschool teachers included easy-to-use a computer, ability to actively use various programs on the computer, quicker access, and widespread use of computers. The preschool teachers also stated that they actively used smart phones besides the computers during the distance learning process. The reasons for choosing smart phones included easy-to-use them by themselves and parents, widespread use of smart phones, quick access to smart phones, use of other technologic tools by different family members, and receiving feedbacks from children. The preschool teachers reported that they also used tablet computers and television, even limited, other than computers and smart phones. Similarly, some of the teaching materials to be used in the early childhood during the distance learning process were reported as smart phones, tablets, computers, printed sources, television and internet (Neumann & Neumann, 2017; Oliemat et al., 2018).

The preschool teachers mentioned positive and negative factors affecting distance learning process. The teachers expressed that there were technologic deficiencies, the date were irrelevant, the parents had no interest, and they had difficulty in adapting activities to distance learning due

to age and availability of children. The difficulties in accessing the internet and the inadequacy of access to technological tools in the early days of the pandemic period are seen as one of the factors that negatively affect participation in education activities through distance education (Kazak and Karaahmetoğlu, 2023). Gedik and Şahan (2023) stated that during the pandemic process, parents were unsuccessful in preparing the educational environment of their children and in following the education process of the child. This result supports the conclusion obtained in the study that the indifference of the parents negatively affects the distance education process. They indicated that reduced interaction of children with peers had negative influence on their social development. It was reported that children had difficulty in fully focusing on their teacher on the screen, and the teacher's control over the class was reduced. Likewise, Sirem and Baş (2020) reported that interviews with children who had difficulty in reading and with their parents during the pandemic demonstrated that interaction of children with their teacher was reduced and their social-emotional development was negatively affected. Taghizadeh & Hasani Yourdshahi (2020) reported major barriers to use of technology for preschool education as insufficient ability of teachers to teach through technology and insufficient support from school. They also pointed out that most of the teachers did not have sufficient technical and pedagogic knowledge to use technology, but they were willing to participate into technology-based professional development programs.

The preschool teachers stated that they and children had the chance to get to know the technology in order to adapt to distance learning process during the pandemic, they improved themselves at use of technology, they contributed to their professional development, and they had access to more information. Demetriou & Nikiforidou (2019) stated that integration of educational technology into early childhood setting was an urgent need. Therefore, teachers should receive quality training on technologies. Actually, the preschool teachers reported that course provided them on the use of computers and technology did not have a sufficient quality (Gudmundsdottir & Hatlevik, 2018). Furthermore, it was indicated that children who commonly use digital tools should be quickly digital literate (Demetriou & Nikiforidou, 2019). The teachers mentioned that also the parents became a part of the preschool education and had improved awareness, the parents spent more time with their children, they allowed more time for their family due to flexible working hours, and spread of virus was prevented somewhat through distance learning. Bakioğlu and Çevik (2020) reported that pandemic provided an opportunity to teachers professionally improve themselves, and they felt less tired physically. Bayazit, Sülun, Koyuncu, Koncak, Yetiş, and Çiftçi (2023) stated that the use of technology in education is beneficial in saving time for teachers. It is thought that this situation helps the teacher to create time to develop himself professionally.

Based on the data obtained from the interviews with preschool teachers, while contributions of using technology to distance learning were mostly reported as educational contributions, the other contributions included improved skill of children to use technology and improved developmental areas of children. The educational contributions comprised of maintenance of education activities without interruption despite pandemic, no interruptions in communications between the children and the teachers, and ability to ensure that children learn at their own pace. When the study conducted by Ardıç, Tanık Önal and Önal (2023) with pre-school teacher candidates is examined, it is seen that similar results have been reached. Participants stated that technology facilitates learning by making it permanent, helps to embody abstract concepts, and makes positive contributions to education by making it fun and remarkable. Bayazit et al. (2023)

stated in their study that the participants stated that the use of technology in education has more positive aspects than negative aspects. They stated that the participants supported permanent learning, helped to embody abstract concepts and provided quick access to information. The results obtained from these two studies also support that the use of technology in education has positive educational contributions. They also indicated that technologies provided auditory and visual support for children, and experiments, which are impossible to conduct or extremely costly, could be performed easily during this period. Anderson & Toh-heng (2019) concluded that use of digital tools for the early childhood education would contribute to diversity, and defined digital tools as learning tools suitable for current requirements. Furthermore, it was recommended to use game-based digital technologies for the early childhood education. Nolan & McBride (2014) suggested that digital game-based learning could be an alternative to education of children in the early childhood period during the distance learning process.

The preschool teachers reported that children had an opportunity to get to know the technology more closely, their skill to use technology was improved, and they became aware that they could use technology not only for games and having fun, but also for learning. They also expressed that use of technology during the distance learning process provided support for cognitive and social development of children. Sayan (2016) reported that use of technology for education supported mathematical skills and language development of children. Marklund & Dunkels (2016) believe that use of technology by preschool teachers would improve children's ability and skills for literacy and mathematics. In addition, Panadero (2017) concluded that use of technology contributed to children's ability for self-regulation. Mertala (2019) suggested that use of technology would allow children with special education needs to benefit more from education. Dong & Newman (2016) concluded that use of technology also promoted social-emotional skills. Alelaimat et al. (2021) reported that technology-aided teacher's training programs and school curriculum would contribute to self-confidence of teachers and increase the support for children's learning process.

Finally, according to data obtained from the interviews with preschool teachers, they expressed that using technology during the distance learning process negatively affected the children's health and developmental areas. The harms mentioned by them included eye disorders; physical disorders such as obesity; psychological disorders; prolonged exposure to screens; distraction; access to harmful contents; and negative impacts on the social development and language development of children. Similarly, Harman et al. (2005) reported that use of technology negatively affected children's social skills and self-respect, resulting in increased aggressiveness and social anxiety. The other research by Pagani et al. (2010) reported that children who spent too much time at the screen suffered from distraction, reduced self-control skills, and negative impacts on the cognitive development. Bayazit et al. (2023) stated that children may start to use technology excessively, causing them to develop addiction. Furthermore, replacement of traditional games with internet-based games and applications may result in weakened social skills and interaction of children (Oliemat et al., 2018). Öner (2020) concluded that traditional games promoted children's cognitive, affective, social, emotional development of children more than the digital games.

As a result, preschool teachers appear to actively use technology for personal and professional reasons during the distance learning process. It seems that the commonly used devices for distance learning are computers and smart phones. It was mentioned that distance learning had both positive and negative aspects. Especially, awareness of technology and

improved knowledge and skills of children and teachers were considered important. Also, the teachers mentioned that excessive use of technology had negative effects on the health and development of children.

Suggestions

It may be recommended that the preschool education program may be supported by the acquirements of technology in line with the requirements of this age. The parents could be kept informed in order to minimize the harms but enhance benefits of using technology for distance learning, and they could be made an active stakeholder of this process. In order to increase the efficiency of distance learning, internet infrastructure and access of children to technological tools could be further improved. The working group of this research comprised of preschool teachers. A similar research may be conducted on the parents of children receiving preschool education.

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References

Abbitt, J. T. (2011). An investigation of the relationship between self-efficacy beliefs about technology integration and technological pedagogical content knowledge (tpack) among preservice teachers. *Journal of Digital Learning in Teacher Education, 27*(4), 134–143. https://doi.org/10.1080/21532974.2011.10784670

Alelaimat, A. M., Ihmeideh, F. M., & Alkhawaldeh, M. F. (2021). Preparing preservice teachers for technology and digital media integration: Implications for early childhood teacher education programs. *International Journal of Early Childhood*, 1-19.

Alsuwidan, S. I. (2018). The teacher perspective on integrating technology into their early childhood classrooms in Saudi Arabia. *Doctoral dissertation, ProQuest LLC*. Retrived from https://eric.ed.gov/?id=ED588210

Altunay, E., Oral, G., & Yalçınkaya, M. (2014). Eğitim kurumlarında mobbing uygulamalarına ilişkin nitel bir araştırma. [A qualitative research about mobbing implications in educational institutions]. *Sakarya University Journal of Education, 4*(1), 62-80. Retrieved from https://dergipark.org.tr/tr/pub/suje/issue/20635/220019

Anderson, R., & Toh-heng, H. L. (2019). Factors influencing the use of digital technology in early childhood education. *New Zealand International Research in Early Childhood Education, 22*(1), 31-45.

Ardıç, M., Tanık Önal, N. & Önal, N. (2023). Teknoloji destekli fen eğitimi bağlamında edpuzzle'a yönelik bir değerlendirme. *Temel Eğitim Dergisi,* (20), 83-97.

https://doi.org/10.52105/temelegitim.20.6

Aşkar, P. (2003). Eğitimde teknoloji kullanımı. [Use of technology in education]. Retrived from http://www.bto305.hacettepe.edu.tr/2003guz/

Bajovic, M. (2018). Playing and learning across the concrete and digital realms: a new context for the new learners. *International Journal of Play, 7*(2), 199–209.

https://doi.org/10.1080/21594937.2018.1496002

Bakioğlu, B., & Çevik, M. (2020). COVID-19 pandemisi sürecinde fen bilimleri öğretmenlerinin uzaktan eğitime ilişkin görüşleri. [Science teachers' views on distance education in the COVID-19 Pandemic Process]. *Electronic Turkish Studies*, *15*(4), 109-129. https://doi.org/10.31592/aeusbed.909184

Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, *2*(2), 113-115. https://doi.org/10.1002/hbe2.191

Bayazit, M., Sülun, O., Koyuncu, İ., Koncak, H., Yetiş, E. & Çiftçi, F. (2023). İlköğretim öğrencilerinin teknolojik araç-gereç kullanımları: öğretmen görüşlerinin incelenmesi. *Akademik Tarih ve Düşünce Dergisi, 10*(2), 508-522.

Bingimlas, K. A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics, science and technology education, 5*(3), 235-245. https://doi.org/10.12973/ejmste/75275

Blake, R. (2007). New trends in using technology in the language curriculum. *Annual Review of Applied Linguistics, 31*, 1–17. http://dx.doi.org/10.1017/S0267190508070049

Bozkurt, G., & Johnston-Wilder, S. (2011). Factors influencing student teachers 'use of ICT in mathematics teaching. In S. Barton, J. Hedberg, & K. Suzuki (Eds.), *Proceedings of Global Learn 2011* (pp. 627–634).

Brem, A., Viardot, E., & Nylund, P. A. (2021). Implications of the coronavirus (COVID-19) outbreak for innovation: Which technologies will improve our lives?. *Technological Forecasting and Social Change*, *163*, 120451. https://doi.org/10.1016/j.techfore.2020.120451

Can, E. (2020). Coronavirüs (Covid-19) pandemisi ve pedagojik yansımaları: Türkiye'de açık ve uzaktan eğitim uygulamaları. [Coronavirus (Covidien-19) pandemic and pedagogical implications: Open and distance education applications in Turkey]. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi, [Journal of Open Education Applications and Research], 6*(2), 11-53.

Clarke, L. Abbott, L. (2016). Young pupils', their teachers' and classroom assistants' experiences of iPads in a Northern Ireland school: Four and five years old, who would have thought they could do that? *British Journal of Educational Technology, 47* (4), 1003-1339. https://psycnet.apa.org/doi/10.1111/bjet.12266

Coban, A. (2020). On pandemics, technology, and early childhood education: An opinion piece. *Childhood Education*, *96*(6), 66-69. https://doi.org/10.1080/00094056.2020.1846393

Cox, M. J., & Abbott, C. (2004). ICT and attainment: A review of the research literature, Coventry and London, British Educational Communications and Technology Agency/Department for Education and Skills. Retrived from https://www.researchgate.net/publication/265003809_ICT_and_Attainment_A_Review_of_the_Research_Literature

Creswell, J. W. (2013) *"Nitel araştırma yöntemleri. [Qualitative research methods]."* Ankara: Siyasal.

Çiçekli, M. (2014). Ortaokul branş öğretmenlerinin bilişim teknolojilerini kullanma düzeyi. [Level of use of information technologies by secondary school teachers]. Unpublished Master Thesis, İstanbul Aydın University, Social Science Institute, İstanbul.

DeGennaro, D. (2008). Learning designs: An analysis of youth-initiated technology use. *Journal of Research on Technology in Education, 41*(1), 1–20.

Demetriou, K., & Nikiforidou, Z. (2019). The relational space of educational technology: Early childhood students 'views. *Global Studies of Childhood*, *9*(4), 290-305. https://doi.org/10.1177/2043610619881458

Demir, O. (2015). Okul öncesi öğretmenlerinin bilişim teknolojilerini kullanma durumları ve bunun öğretime etkisi (Nitel bir çalışma). [Pre-school theachers 'situation of using the information technology and the influence of this to teaching (A qualitative study)]. *Uluslararası Eğitim Bilimleri Dergisi [The Journal of International Education Science], 2*(4), 466-479.

Demirhan, S. (2012). Fen ve teknoloji öğretmenlerinin bilgi ve iletişim teknolojilerine ilişkin özyeterlik algıları ve bilgi ve iletişim teknolojilerini kullanım durumları: Denizli ili örneği. [Science teachers' perception of information and communication technologies self-efficacy and their using for information and communication technologies (the case of denizli provınce)] (Unpublished master thesis). *Pamukkale University Institute of Science,* Denizli.

Dong, C., & Newman, L. (2016). Ready, steady pause: integrating ICT into Shanghai preschools. *International Journal of Early Years Education*, *24*(2), 224-237. http://dx.doi.org/10.1080/09669760.2016.1144048

Ertmer, P. A. & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education, 42*(3), 255-284.

Flewitt, R., Messer, D., & Kucirkova, N. (2015). New directions for early literacy in a digital age: The iPad. *Journal of Early Childhood Literacy*, *15*(3), 289-310. https://doi.org/10.1177/1468798414533560

Fullan, M., & Langworthy, M. (2014). *A rich seam: How new pedagogies find deep learning.* London: Pearson. https://doi.org/10.1080/15700763.2015.1073331

Gedik, Ç. & Şahan, G. (2023). Covid-19 salgin süreci, bilişim teknolojileri rehber (BTR) öğretmenlerinin uzaktan eğitime ilişkin görüşlerinin incelenmesi. [Covid-19 epidemic process, examination of information technology guidance (BTR) teachers' views on

distance education], *Türkiye Bilimsel Araştırmalar Dergisi [Turkish Journal of Scientific Researches], 8*(1), 55-68

Gill, L., Dalgarno, B., & Carlson L. (2015). "How does pre-service teacher preparedness to use ICTs for learning and teaching develop through their degree program?" *Australian Journal of Teacher Education 40*(1), 36–59. https://doi.org/10.14221/ajte.2015v40n1.3

Gök, A. (2010). Okul öncesi öğretmenlerinin bilişim teknolojileri kullanma durumları ve bunun öğrenci ilgi ve dikkat düzeyine ilişkin görüşler. [Preschool teachers' use of information technologies and their views on student interest and attention level]. Yayımlanmamış Yüksek Lisans Tezi. [Unpublished Master Thesis]. Yeditepe Üniversitesi Sosyal Bilimler Enstitüsü [Yeditepe University, Social Sciences Enstitute], İstanbul.

Gök, N., Turan, S. & Oyman, N. (2011). Okul öncesi öğretmenlerinin bilişim teknolojilerini kullanma durumlarına ilişkin görüşleri. [Preschool teachers 'views on usage of ınformation techonologies], *Pegem Eğitim ve Öğretim Dergisi[Pegem Journal of Education and Instruction], 1*, 59-66. https://doi.org/10.14527/C1S3M8

Gudmundsdottir, G. B., & Hatlevik, O. E. (2018). Newly qualified teachers 'professional digital competence: implications for teacher education. *European Journal of Teacher Education*, *41*(2), 214-231. https://doi.org/10.1080/02619768.2017.1416085

Gülbahar, Y, Alper, A. (2009). A content analysis of the studies in instructional. *Ankara University Journal of Faculty of Educational Sciences (JFES), 42*(2), 93-112. https://doi.org/10.1501/Egifak_0000001178

Hansen, J. D., & Reich, J. (2015). Democratizing education? Examining access and usage patterns in massive open online courses. *Science*, *350*(6265), 1245-1248. https://doi.org/10.1126/science.aab3782

Harman, J. P., Hansen, C. E., Cochran, M. E. & Lindsey, C. R. (2005). Liar, liar: Internet faking but not frequency of use affects social skills, self-esteem, social anxiety, and aggression. *CyberPsychology & Behavior, 8*(1), 1-6. https://doi.org/10.1089/cpb.2005.8.1

Hinostroza, J. E., Ibieta, A., Claro, M., & Labbé, C. (2015). Characterisation of teachers 'use of computers and Internet inside and outside the classroom: The need to focus on the quality. *Education and Information Technologies, 21*, 1595–1610. https://doi.org/10.1007/s10639-015-9404-6

Johnson, B., & Christensen, L. (2014). Eğitim araştırmaları (nicel, nitel ve karma yaklaşımlar). (çev. Selçuk Beşir DEMİR). Ankara: Eğiten Kitap.

Karaca, F. & Aktaş, N. (2019). "Ortaöğretim kurumu öğretmenlerinin Web 2.0 uygulamaları için haberdarlıklarının, yeterlilik düzeylerinin, kullanım sıkılıklarının ve eğitsel amaçlı kullanım biçimlerinin incelenmesi. [An Exploration of Secondary School Teachers ' Awareness, Competency and Utilization of Web 2.0 Technologies for Educational Purposes]." *Erzincan Üniversitesi Eğitim Fakültesi Dergisi[Erzincan University Education Faculty Journal]*, *21*(2), 212-230. http://dx.doi.org/10.17556/erziefd.473412

Kazak, E. & Karaahmetoğlu, H. H. (2023). Uzaktan eğitim sürecinde karşılaşılan sorunlara ilişkin öğretmen görüşleri. [Teachers' views on the problems encountered in the distance education process]. *Nevşehir Hacı Bektaş Veli Üniversitesi SBE Dergisi [Nevşehir University Journal of Social Sciences Institute], 13*(1), 385- 401. DOI: 10.30783/nevsosbilen.1213000

Keengwe, J., Onchwari, G., & Wachira, P. (2008). Computer technology integration and student learning: Barriers and promise. *Journal of Science Education and Technology, 7*(6), 560–565.

Kırık, A. (2014). Uzaktan eğitimin tarihsel gelişimi ve Türkiye'deki durumu. [The historical development of distance education and its situation in Turkey]. *Marmara İletişim Dergisi[Marmara Communication Journal], 0* (21), 73-94. https://doi.org/10.17829/midr.20142110299

Kildare, C. A., & Middlemiss, W. (2017). Impact of parents mobile device use on parent- child interaction: A literature review. *Computers in Human Behavior*, *75*, 579-593. https://doi.org/10.1016/j.chb.2017.06.003

Kol, S. (2012). Okul öncesi eğitimde teknolojik araç-gereç kullanımına yönelik tutum ölçeği geliştirilmesi [Development of attitude scale devoted to the usage of technology in pre-school education]. *Kastamonu Eğitim Dergisi[Kastamonu Education Journal], 20* (2), 543-554.

Lawless, K. A., & Pellegrino, J. W. (2007). Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers. *Review of Educational Research*, *77*(4), 575-614. https://doi.org/10.3102/0034654307309921

Lindahl, M. G., & Folkesson, A. M. (2012). ICT in preschool: friend or foe? The significance of norms in a changing practice. *International Journal of Early Years Education*, *20*(4), 422-436. http://dx.doi.org/10.1080/09669760.2012.743876

Lune, H., & Berg, B. L. (2017). *Qualitative research methods for the social sciences* (9th edition.). Boston: Pearson Higher Education.

Lynch, J., & Redpath, T. (2014). 'Smart'technologies in early years literacy education: A meta-narrative of paradigmatic tensions in iPad use in an Australian preparatory classroom. *Journal of Early Childhood Literacy*, *14*(2), 147-174. http://dx.doi.org/10.1177/1468798412453150

Madanipour, P., & Cohrssen, C. (2020). Augmented reality as a form of digital technology in early childhood education. *Australasian Journal of Early Childhood, 45*(1), 5-13. https://doi.org/10.1177/1836939119885311

Marklund, L., & Dunkels, E. (2016). Digital play as a means to develop children's literacy and power in the Swedish preschool. *Early Years*, *36*(3), 289-304. http://dx.doi.org/10.1080/09575146.2016.1181608

Meneses, J., Fàbregues, S., Rodríguez-Gómez, D., & Ion, G. (2012). Internet in teachers ' professional practice outside the classroom: Examining supportive and management

uses in primary and secondary schools. *Computers & Education, 59*, 915–924. doi:10.1016/j.compedu.2012.04.011. https://doi.org/10.1016/j.compedu.2012.04.011

Merç, A. (2015). Using technology in the classroom: A study with Turkish pre-service EFL teachers. *Turkish Online Journal of Educational Technology-TOJET*, *14*(2), 229-240.

Mertala, P. (2019). Teachers 'beliefs about technology integration in early childhood education: A meta-ethnographical synthesis of qualitative research. *Computers in Human Behavior*, *101*, 334-349. https://doi.org/10.1016/j.chb.2019.08.003

Moore, M. G., & Kearsley, G. (2005). Distance education: A systems view. Belmont, CA: Thomson Wadsworth.

Neumann, M. M., & Neumann, D. L. (2017). The use of touch-screen tablets at home and pre-school to foster emergent literacy. *Journal of Early Childhood Literacy*, *17*(2), 203-220. https://doi.org/10.1177/1468798415619773

Njiku, J., Maniraho, J. F., & Mutarutinya, V. (2019). Understanding teachers 'attitude towards computer technology integration in education: A review of literature. *Education and Information Technologies*, *24*(5), 3041-3052. https://doi.org/10.1007/s10639-019-09917-z

Nolan, J., & McBride, M. (2014). Beyond gamification: reconceptualizing game-based learning in early childhood environments. *Information, Communication & Society*, *17*(5), 594-608. https://doi.org/10.1080/1369118X.2013.808365

Oliemat, E., Ihmeideh, F., & Alkhawaldeh, M. (2018). The use of touch-screen tablets in early childhood: Children's knowledge, skills, and attitudes towards tablet technology. *Children and Youth Services Review*, *88*, 591-597. https://doi.org/10.1016/j.childyouth.2018.03.028

Otterborn, A., Schönborn, K., & Hultén, M. (2019). Surveying preschool teachers 'use of digital tablets: general and technology education related findings. *International Journal of Technology and Design Education*, *29*(4), 717-737. https://doi.org/10.1007/s10798-018-9469-9

Öner, D. (2020). The using technology and digital games in early childhood: An investigation of preschool teachers' opinions. *Inonu University Journal of the Graduate School of Education, 7*(14), 138-154.

Pagani, Linda & Fitzpatrick, Caroline & Barnett, Tracie & Dubow, Eric. (2010). Prospective associations between early childhood television exposure and academic, psychosocial, and physical well-being by middle childhood. *Archives of pediatrics & adolescent medicine, 164*, 425-31. https://doi.org/10.1001/archpediatrics.2010.50

Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in psychology*, *8*, 422-433. https://doi.org/10.3389/fpsyg.2017.00422

Roberts-Holmes, G. (2014). Playful and creative ICT pedagogical framing: a nursery school case study. *Early Child Development and Care*, *184*(1), 1-14. https://doi.org/10.1080/03004430.2013.772991

Rollett, H., Lux, M., Strohmaier, M., Dosinger, G., & Tochtermann, K. (2007). The Web 2.0 way of learning with technologies. International Journal of Learning Technology, 3(1), 87-107. https://doi.org/10.1504/IJLT.2007.012368

Sak, R., Erden, F., Sak, İ. T. Ş., & Esmeray, H. (2016). Early childhood teachers and computers: beliefs and self-reported practices. *Journal of Education and Future*, (10), 19-33.

Sayan, H. (2016). Okul öncesi eğitimde teknoloji kullanımı. [Using technology in preschool education]. *21.Yüzyılda Eğitim ve Toplum Dergisi [Education and Society in The 21st Century], 5*(13), 67-83.

Simsar, A., & Kadim, M. (2017). Okul öncesi öğretmenlerinin bilişim teknolojilerini kullanma durumları ve bunun öğretime etkisi. [The pre-school teachers' information technology use and its impacts on teaching] *Kilis 7 Aralık Üniversitesi Sosyal Bilimler Dergisi, 7* (14),127-146.

Sirem, Ö., & Baş, Ö. (2020). Okuma güçlüğü olan ilkokul öğrencilerinin Covid-19 sürecinde uzaktan eğitim deneyimleri. *Journal of Turkish Studies, 15*(4), 993-1009. https://dx.doi.org/10.7827/TurkishStudies.43346

Strawhacker, A., Lee, M., & Bers, M. (2018). Teaching tools, teachers 'rules: exploring the impact of teaching styles on young children's programming knowledge in ScratchJr. *International Journal of Technology and Design Education*, *28,* 347-376. http://dx.doi.org/10.1007/s10798-017-9400-9

Sun, B. (2020). On the basic principles of the integration of information technology and early childhood education. *Frontiers in Educational Research, 3*(7), 1-2. https://doi.org/10.25236/FER.2020.030701

Taghizadeh, M., & Hasani Yourdshahi, Z. (2020). Integrating technology into young learners' classes: language teachers' perceptions. *Computer Assisted Language Learning*, *33*(8), 982-1006. http://dx.doi.org/10.1080/09588221.2019.1618876

Thelmadatter, L. (2007). The computers are coming … are here! *TESOL Greece Newsletter, 95*, 1-3.

Tondeur, J., Pareja Roblin, N., van Braak, J., Fisser, P., & Voogt, J. (2013). Technological pedagogical content knowledge in teacher education: In search of a new curriculum. *Educational Studies, 39*, 239–243. https://doi.org/10.1080/03055698.2012.713548

Uyanık Aktulun, Ö. & Elmas, R. (2019). 21. yüzyıl okul öncesi öğretmenleri için sosyal medya araçları: Muhtemel faydalar. [Social media tools for 21st century preschool teachers: Possible benefits]. *Temel Eğitim[Journal of Primary Education], 1* (4), 6-20.

Yıldırım, A., & Şimşek, H. (2013). "*Sosyal bilimlerde nitel araştırma yöntemleri (9.baskı). [Qualitative research methods in the social sciences] (9th edition).*" Ankara: Seçkin.

Vaala S. E., & Bleakley, A. (2015). Monitoring, mediating, and modeling: Parental influence on adolescent computer and internet use in the United States, *Journal of Children and Media, 9*(1), 40-57, DOI: 10.1080/17482798.2015.997103

Voogt, J., & McKenney, S. (2017). TPACK in teacher education: Are we preparing teachers to use technology for early literacy?. *Technology, pedagogy and education*, *26*(1), 69-83. http://dx.doi.org/10.1080/1475939X.2016.1174730

Webb, M., & Cox, M. (2004). A review of pedagogy related to information and communication technology. *Technology, Pedagogy and Education, 13,* 235–286. http://dx.doi.org/10.1080/14759390400200183

Geniş Türkçe Özet

Giriş

Son yıllarda öğretmenler ve çocuklar dijital medya araçlarını ve sosyal medya ağlarını öğrenme süreçlerinde yoğun olarak kullanmaya başladılar. Bundan dolayı teknoloji okul öncesi dönemde eğitim ve öğretimi etkileyen önemli unsurlar arasında yer almaktadır (Edwards, 2016). Fakat yapılan araştırmalar (Voogt & McKenney, 2017; Voogt vd., 2009; Webb & Cox, 2004) öğretmenlerin teknolojiyi eğitim sürecine entegre etmekte zorlandıklarını göstermektedir.

Teknoloji, yaşamın her alanında sıkça kullanıldığı gibi günümüzde eğitim alanında da sıklıkla kullanılmaktadır (DeGennaro, 2008; Vaala & Bleakley, 2015). Teknolojinin kullanımının artması ile birlikte eğitim sürecindeki etkilerinin de incelenmesi gerekliliği ortaya çıkmıştır (Gök vd., 2011). Öğretmenlerin teknolojiyi eğitim sürecinde etkili kullanabilmesi teknolojiyi nasıl kullanacağını bilmesi ile doğru orantılıdır (Strawhacker vd., 2018).

Tüm dünyayı etkisi altına alan coronavirüs salgını ile birlikte pek çok ülkede uzaktan eğitim sürecine geçilmiştir (Bao, 2020). Uzaktan eğitim pandemiden önce yoğun kullanılan bir eğitim modeli olmasa da pandemiden sonra, okul öncesi eğitim kademesinden üniversiteye kadar, bütün kademelerde yoğun bir şekilde kullanılmaya başlanmıştır (Brem vd., 2021). Farklı ülkeler yurttaşları için uzaktan eğitim faaliyetlerine büyük oranda yatırım yapmışlardır. Bu sayede farklı güçlükler ve maddi imkânsızlıklara sahip öğrenci ve öğretmenler için eğitimde fırsat eşitliği sağlanmaya çalışılmıştır (Kırık, 2014).

Uzaktan eğitimin ihtiyaç haline gelmesi ile birlikte öğretmenlerin teknolojiyi kullanma yeterlilikleri de değerlendirilmeye başlanmıştır (Merç, 2015). Öğretmenlerinin teknoloji kullanmadaki yeterliliklerinin yanı sıra sistemin de altyapı, içerik, kalite, tasarım gibi açılardan güçlendirilmesi gerektiği görülmektedir (Alsuwidan, 2018).

Alanyazın incelendiğinde uzaktan eğitim sürecinde okul öncesi öğretmenlerinin teknoloji kullanımına yönelik yapılan araştırmaların sınırlı olduğu görülmüştür. Bu çalışmayla Türkiye'de son iki yılda okul öncesi öğretmenlerinin belirli aralıklarla yaptığı uzaktan eğitim sürecinde teknoloji kullanımına yönelik görüşlerinin belirlenmesi ve bu durumu belirleyen olumsuz faktörlerin iyileştirilmesine yönelik yapılabileceklere dair çözüm önerileri sunulmaktadır. Yapılan bu çalışmada okul öncesi öğretmenlerinin uzaktan eğitim sürecinde teknolojiyi kullanmaya yönelik görüşlerini belirlemek amaçlanmıştır.

Yöntem

Bu araştırmada okul öncesi öğretmenlerin uzaktan eğitim sürecinde teknoloji kullanım durumlarını incelemeye yönelik olarak yapılan nitel bir çalışmadır. Araştırma desenlerinden fenomenoloji (olgu bilim) deseni kullanılmıştır. Fenomenolojik çalışmalar birkaç bireyin bir

fenomen ya da kavram ile ilgili deneyimlerinin ortak anlamını meydana çıkarmaktadır (Creswell, 2013).

Araştırma için çalışma grubunun seçilmesinde amaçlı örneklem yaklaşımı kullanılmıştır. Bu kapsamda uzaktan öğretim yoluyla eğitime devam eden 50 okul öncesi öğretmeni çalışma grubunu oluşturmuştur. Katılımcılar ile görüşmeler gönüllü olarak yapılmış olup katılımcılara elde edilen verilerin bu araştırma harici başka amaçlar için kullanılmayacağına dair bilgi verilmiştir.

Veri toplama aracı olarak yarı yapılandırılmış görüşme formu kullanılmıştır. Yarı yapılandırılmış görüşme formu, sonuçları karşılaştırmak amacıyla alan yazındaki bilgiler ve araştırma soruları doğrultusunda geliştirilmiştir. Birinci bölümde araştırmaya katılan okul öncesi öğretmenlerinin demografik bilgilerine yönelik 5 soru yer almaktadır. İkinci bölümde de okul öncesi öğretmenlerinin teknolojiye ilişkin görüşleri, uzaktan eğitim sürecini etkileyen olumlu ve olumsuz faktörler, yararlandıkları internet araçları, teknolojinin yararları ve zararları üzerine toplam 9 sorudan oluşmaktadır. Pandemi sürecinde yüzyüze görüşme sağlık açısından çeşitli riskler barındırmaktadır. Bu nedenle bilgisayar destekli görüşmelerden de yararlanılmış olup görüşmelerin 22 tanesi zoom programı üzerinden 17 tanesi yüz yüze ve 11 tanesi whatsapp uygulaması ile elde edilmiştir. Bu görüşmeler ortalama 5-15 dakika arasında sürmüştür. Katılımcıların onayı ile sistem üzerinden ses kaydı alınmıştır ve sonrasında alınan bu ses kayıtları çözümlenmiştir.

Araştırmanın verileri toplanmadan Van Yüzüncü Yıl Üniversitesi Sosyal ve Beşeri Etik Bilimler Komisyonu'ndan araştırmanın etik kurallara uygun olduğuna ilişkin rapor alınmıştır. Yapılan görüşmelerin ses kayıtları ve transkriptler araştırmacının ismi yerine Ö1,Ö2….Ö50 şeklinde kodlanmıştır. Araştırmaya yönelik olarak toplanan verilerin analiz ve yorumlamasına geçilmiştir. Yarı yapılandırılmış görüşme tekniği ile yüz yüze ve bilgisayar destekli görüşme yöntemi kullanılarak elde edilen veriler içerik analizi yöntemi ile analiz edilmiştir.

Sonuçlar ve Tartışma

Bu araştırma ile okul öncesi öğretmenlerinin uzaktan eğitim sürecinde teknoloji kullanımına yönelik görüşlerini ortaya çıkarmak amaçlanmıştır. Görüşme yapılan okul öncesi öğretmenlerinin, uzaktan eğitim sürecinde teknoloji kullanım nedenleri incelendiğinde, kişisel nedenlerin ve verilen cevapların bir kısmında ise mesleki nedenlerin öne çıktığı görülmüştür. Okul öncesi öğretmenlerinin teknoloji kullanımındaki kişisel nedenlerinin başında, aileleriyle veya arkadaşlarıyla iletişim kurma ihtiyaçları gelmektedir. Okul öncesi öğretmenlerinin diğer kişisel nedenleri; sosyal medya hesaplarına erişim sağlayabilmek, güncel bilgileri takip edebilmek ve çeşitli konularda araştırma yapabilmektir. Ayrıca medya araçlarının, ev işlerinde zaman kazanmak, çeşitli program ve dizi filmleri seyredebilmek, günlük rutinleri gerçekleştirmek, alışveriş yapmak, boş vakitleri değerlendirmek ve ihtiyaçların karşılanması için kullanıldığı ifade edilmiştir. Okul öncesi öğretmenlerinin teknoloji kullanımının mesleki nedenleri ise; etkinlik araştırma, planlama, materyal hazırlama ve uygulama olarak ifade edilmiştir. Öğretmenler uzaktan eğitimde uygulamaya devam edebilmek, etkinlikler için kaynak araştırması yapabilmek, derslere hazırlık yapabilmek ve meslektaşları ile bilgi paylaşımında bulunabilmek için teknolojiyi kullandıklarını ifade etmişlerdir. Karaca ve Aktaş (2019) öğretmenlerin Web 2.0 araçlarını, iletişim, derslerin işlenmesi, derslerle ilgili bilgi edinme ve araştırma yapma için kullandıklarını belirtmişlerdir. Ancak Gill, Dalgarno & Carlson (2015) internet ve bilgisayar teknolojilerinin eğitim öğretim sürecinde yeterince kullanılmadığı sonucuna

ulaşmışlardır. Bunun nedeni öğretmenlerin, öğretimde kullanılan geleneksel metod ve materyallerin, dijital yöntem ve materyallerden daha faydalı olduğu inancına sahip olmaları olabilir (Lindahl & Folkesson, 2012).

Okul öncesi öğretmenlerinin uzaktan eğitim sürecinde en çok kullandığı teknolojik aracın bilgisayar olduğu sonucuna varılmıştır. Ancak Taghizadeh & Hasani Yourdshahi (2020) öğretmenlerin sınırlı bilgisayar olanakları olduğunu ifade etmişlerdir. Okul öncesi öğretmenlerinin bilgisayar kullanma nedenleri incelendiğinde; kullanımının kolay olması, çeşitli programların bilgisayarda aktif kullanılabilmesi, erişimin daha hızlı olması ve yaygın kullanımını göstermişlerdir. Okul öncesi öğretmenleri, bilgisayar dışında uzaktan eğitim sürecinde akıllı telefonları da aktif kullandıklarını belirtmişlerdir. Akıllı telefonları tercih etme sebepleri arasında kendileri ve ebeveynler için kullanım kolaylığı sağlaması, yaygın kullanımının olması, hızlı erişimin sağlanması, diğer teknolojik araçların farklı aile üyeleri tarafından kullanılması ve çocuklardan geri dönütlerin alınabilmesi gösterilmiştir. Okul öncesi öğretmenleri bilgisayar ve telefon dışında sınırlı da olsa tablet ve televizyondan da yararlandıklarını belirtmişlerdir. Benzer olarak uzaktan eğitim sürecinde erken çocuklukta kullanılabilecek öğretim materyallerinden bazıları akıllı telefonlar, tabletler, bilgisayarlar, basılı kaynaklar, televizyon ve internet olarak ifade edilmiştir (Neumann & Neumann, 2017; Oliemat, Ihmeideh & Alkhawaldeh, 2018).

Okul öncesi öğretmenleri uzaktan eğitim sürecini etkileyen faktörler hakkında olumlu ve olumsuz faktörlerden söz etmişlerdir. Öğretmenler teknolojik yetersizliklerin olmasını, velilerin ilgisiz kalmalarını, çocukların yaş ve hazırbulunuşluk nedenleri ile etkinliklerin uzaktan eğitime uyarlanmasında zorluklar yaşandığını ifade etmişlerdir. Pandemi döneminin ilk zamanlarında yaşanan internete erişim sıkıntıları ve teknolojik araçlara ulaşımın yetersiz olması eğitim faaliyetlerine uzaktan eğitimle katılımı olumsuz etkileyen unsurlardan biri olarak görülmektedir (Kazak ve Karaahmetoğlu, 2023). Gedik ve Şahan (2023) pandemi sürecinde velilerin çocuklarının eğitim ortamını hazırlamak ve çocuğun eğitim sürecini takip etmek konularında başarısız olduklarını belirtmişlerdir. Bu sonuç araştırmada elde edilen velilerin ilgisiz kalmalarının uzaktan eğitim sürecini olumsuz etkilediği sonucunu desteklemektedir. Çocukların akranları ile etkileşimlerinin azalması ile sosyal gelişimlerinin olumsuz etkilendiğini belirtmişlerdir. Çocukların ekran karşısında öğretmene tam olarak odaklanamadığı ve öğretmenin ders hâkimiyetinin azaldığı ifade edilmiştir. Aynı şekilde Sirem ve Baş (2020) pandemi sürecinde okuma güçlüğü yaşayan öğrenciler ve aileleri ile yaptıkları görüşmelerde aileler, çocuklarının öğretmenleri ile arasındaki etkileşimlerinin azaldığını, sosyal duygusal gelişimlerinin olumsuz etkilendiğini belirtmişlerdir. Taghizadeh & Hasani Yourdshahi (2020), öğretmenlerin teknolojiyle öğretme becerilerinin yeterli olmaması ve yetersiz okul desteği, teknolojinin okul öncesi eğitimde kullanılmasının önündeki önemli engeller olarak ifade etmişlerdir. Ayrıca çoğu öğretmenin teknoloji kullanımı ile ilgili yeterli teknik ve pedagojik bilgiye sahip olmadığı ancak teknoloji temelli profesyonel gelişim programlarına katılmaya istekli olduklarını ifade etmişlerdir.

Okul öncesi öğretmenleri pandemi süreciyle birlikte uzaktan eğitim sürecine uyum sağlamak adına hem çocukların hem kendilerinin teknolojiyi tanıma fırsatı bulduklarını ve teknoloji kullanımı konusunda kendilerini geliştirdiklerini, mesleki gelişimlerine katkı sağladıklarını ve daha fazla bilgiye ulaştıklarını belirtmişlerdir. Demetriou & Nikiforidou (2019) eğitim teknolojisinin erken çocukluk ortamlarına entegrasyonunun acil bir ihtiyaç olduğunu ifade etmişlerdir. Bunu yaparken öğretmenlere nitelikli bir teknoloji eğitiminin verilmesi gerekmektedir. Nitekim okul öncesi öğretmenleri kendilerine verilen bilgisayar ve teknoloji

kullanımı dersinin yeterince nitelikli olmadığını ifade etmişlerdir (Gudmundsdottir & Hatlevik, 2018). Ayrıca dijital araçları yaygın bir şekilde kullanan çocukların, hızlı bir şekilde dijital okuryazar olmaları gerektiği ifade edilmiştir (Demetriou & Nikiforidou, 2019). Öğretmenler, ebeveynlerin de evde okul öncesi eğitiminin bir parçası haline gelerek farkındalıklarının arttığını, ebeveynlerin çocukları ile daha fazla zaman geçirdiklerini, esnek çalışma saatlerinden dolayı ailelerine daha fazla zaman ayırdıklarını ve salgın nedeniyle virüsün yayılımının uzaktan eğitim ile bir nebze engellendiğini ifade etmişlerdir. Bakioğlu ve Çevik (2020) pandeminin öğretmenlerin mesleki yönde kendilerini geliştirmelerine fırsat sağladığını ve fiziksel olarak daha az yorulduklarını ifade etmişlerdir. Bayazit, Sülun, Koyuncu, Koncak, Yetiş ve Çiftçi (2023) eğitimde teknoloji kullanımının öğretmene zaman kazandırmakta faydalı olduğunu belirtmişlerdir. Bu durumun öğretmenin kendini mesleki anlamda geliştirebilecek vakit oluşturmasına yardımcı olduğu düşünülmektedir.

Okul öncesi öğretmenleri ile yapılan görüşmede elde edilen verilere göre uzaktan eğitim sürecinde teknoloji kullanımının katkıları, çoğunlukla eğitsel katkılar olarak ifade edilirken diğer katkılarının ise teknolojiyi kullanma becerisi ve çocukların gelişim alanlarına katkı olarak ifade edilmiştir. Eğitsel açıdan katkılarını, pandemi olmasına karşın eğitim öğretim faaliyetlerine ara vermeden devam edilmesi, çocuklar ve öğretmenler arasında iletişim kopukluğunun yaşanmaması ve çocukların kendi hızlarında öğrenmelerinin sağlanması olarak ifade edilmiştir. Ardıç, Tanık Önal ve Önal'ın (2023) okul öncesi öğretmeni adayları ile yaptıkları çalışma incelendiğinde benzer sonuçlara ulaşıldığı görülmektedir. Katılımcılar teknolojinin öğrenmeyi kolaylaştırarak kalıcı hale gelmesini sağladığını, soyut kavramların somutlaştırılmasına yardımcı olduğunu ve eğitimi eğlenceli ve dikkat çekici hale getirerek eğitime olumlu katılar sunduğunu belirtmişlerdir. Bayazit vd. (2023) yaptıkları çalışmada katılımcıların eğitimde teknoloji kullanımının olumsuz yanlarından çok olumlu yanlarının olduğunu belirttiğini ifade etmişlerdir. Katılımcıların kalıcı öğrenmeyi desteklediğini, soyut kavramların somutlaştırılmasında yardımcı olduğunu ve bilgiye hızlı erişmeyi sağladığını belirtmişlerdir. Bu iki araştırmadan elde edilen sonuçlar da eğitimde teknoloji kullanımının eğitsel açıdan olumlu katkılarının olduğunu desteklemektedir. Ayrıca teknolojinin çocukları görsel ve işitsel olarak desteklediğini ve uygulanması imkânsız ya da maddi olarak yüksek olan deneylerin süreç içerisinde kolayca uygulandığını belirtmişlerdir. Anderson & Toh-heng (2019) erken çocukluk eğitiminde dijital araçların kullanımının çeşitliliğe katkıda bulunacağını ifade etmiş ve dijital araçları günün gereklerine uygun öğrenme araçları olarak tanımlamıştır. Ayrıca oyun temelli dijital teknolojilerin erken çocukluk eğitiminde kullanımı önerilmiştir. Nolan & McBride (2014) dijital oyun temelli öğrenmenin, uzaktan eğitim sürecinde erken çocukluk dönemindeki çocukların eğitimi için bir alternatif olabileceğini belirtmişlerdir.

Okul öncesi öğretmenleri çocukların teknolojiyi daha yakından tanıma fırsatı bulduklarını, teknoloji kullanım becerilerinin geliştiğini ve teknolojiyi sadece oyun ve eğlence amaçlı değil de öğrenme amaçlı kullanabileceklerinin de farkına vardıklarını ifade etmişlerdir. Ayrıca uzaktan eğitim sürecinde teknoloji kullanımının çocukların bilişsel ve sosyal gelişimlerini desteklediğini söylemişlerdir. Sayan (2016) eğitimde teknoloji kullanımının çocukların matematik becerilerini ve dil gelişimini desteklediğini belirtmiştir. Marklund & Dunkels (2016) okul öncesi öğretmenlerinin teknoloji kullanımının çocukların okuryazarlık ve matematik alanlarındaki bilgi ve becerilerini arttıracağına inanmaktadırlar. Ayrıca Panadero (2017) teknoloji kullanımının çocukların öz düzenleme becerilerine katkıda bulunduğu sonucuna varmıştır. Mertala (2019) ise teknoloji kullanımının, özel eğitim gereksinimi olan öğrencilerin eğitim

sürecinden daha fazla faydalanmalarını sağlayacağını belirtmiştir. Ayrıca Dong & Newman (2016) teknoloji kullanımının sosyal duygusal becerileri de desteklediği sonucuna ulaşmışlardır. Alelaimat, Ihmeideh & Alkhawaldeh (2021) teknoloji destekli öğretmen eğitim programlarının ve okul müfredatlarının, öğretmenlerin öz güvenine katkıda bulunacağı ve çocukların öğrenme sürecine olan desteği arttıracağını belirtmişlerdir.

Son olarak okul öncesi öğretmenleri ile yapılan görüşmede elde edilen verilere göre uzaktan eğitim sürecinde teknoloji kullanımının, çocukların sağlıklarını ve gelişim alanlarını olumsuz etkilediğini ifade etmişlerdir. Bu zararları ise, göz hastalıkları ve obezite gibi fiziksel rahatsızlıklar, psikolojik rahatsızlıklar, ekrana uzun süre maruz kalma, dikkat dağınıklığı, zararlı içeriklere erişebilme, çocukların sosyal gelişim ve dil gelişimlerinin olumsuz etkilenmesi olarak ifade etmişlerdir. Benzer şekilde Harman vd. (2005) yaptıkları çalışmada teknoloji kullanımının çocukların sosyal becerilerini ve öz saygılarını olumsuz etkileyerek saldırganlıklarını ve sosyal kaygılarını arttırdığını belirtmişlerdir. Başka bir araştırmada ise Pagani vd. (2010) ekran önünde fazla zaman geçiren çocukların dikkat dağınıklığı yaşadıklarını, öz denetim becerilerinin zayıfladığını, bilişsel gelişimlerinin olumsuz etkilendiğini belirtmişlerdir. Bayazıt vd. (2023), çocukların teknolojiyi fazla kullanmaya başlayarak bağımlılık geliştirmelerine neden olabileceğini ifade etmişlerdir. Ayrıca internet tabanlı oyunlar ve uygulamaların geleneksel oyunların yerini alması da çocukların sosyal beceri ve etkileşimlerinin zayıflamasına yol açabilir (Oliemat, Ihmeideh & Alkhawaldeh, 2018). Öner (2020) geleneksel oyunların dijital oyunlara kıyasla çocukların bilişsel, duyuşsal, sosyal, duygusal ve fiziksel gelişimlerini daha çok desteklediği sonucuna ulaşmıştır.