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## Perceptions of Preschool and Primary School Teachers About Blended Learning Experience

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### ABSTRACT

In the current study, it was aimed to investigate the views and experiences of preschool and primary school teachers regarding blended learning. In the study, case study, one of qualitative designs, was used. In determining the working group, criterion-sampling method was used. The working group was made up of 29 teachers working in Ankara. The data which was collected with semi-structured interview questions was applied content analysed. The findings obtained through the analysis of the data showed that almost all the teachers felt themselves incompetent in planning teaching processes, “as in the nature of blended learning”, with face-to-face and distance education. In addition, teachers pointed out that they needed education in such issues as preparing activities, producing digital content, using technology, classroom management, teaching methods and techniques in the part of distance education of blended learning. It was found that while the views of the primary school teachers teaching to third and fourth grades of primary education were quite positive regarding the applicability of the blended learning, first grade and second grade primary school teachers and preschool teachers were abstained. The results obtained from the findings of the research were discussed depending on the literature and some recommendations were made for the related partners. Given the qualitative nature and limited sample size of this study, future research should explore larger samples using experimental methods. Additionally, enhancing teacher training in technology integration for blended learning is recommended to better equip educators in applying these methods effectively.

**Keywords:** Preschool education, primary education, blended learning, technology integration, educational technology

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## Introduction

Rapid changes in the field of technology have affected the field of education just as they have impacted many other sectors. One significant outcome of these technological advancements in education is the increased use of distance and blended learning. The importance of these methods surged during the Covid-19 pandemic, which had a profound global impact in 2020. As formal education was disrupted, distance and blended learning emerged as critical alternatives on an unprecedented scale.

Countries worldwide, including China, were compelled to close schools and universities in March 2020 due to the pandemic. To ensure continuity in learning, many adopted online and blended learning solutions (Cao et al., 2021). This global shift sets the stage for examining the status of the education system in Turkey during this period. In the academic year of 2019-2020, nearly 25.8 million students were enrolled in education in Turkey, with 1.6 million in preschool and 5.3 million in primary education. Preschool and primary education, considered the basic education stage, encompassed 6.9 million students, accounting for 26.7% of the total student population (Turkish Statistical Institute [TURKSTAT], 2022). With the World Health Organization (WHO) declaring a pandemic on March 11, 2020 (Ministry of National Health, 2022), Turkey's education system faced significant challenges, mirroring the global scenario (United Nations Educational Scientific and Cultural Organization [UNESCO], 2022). Each country, including Turkey, sought temporary solutions to cope with the crisis. Initially, education in Turkey was suspended from March 16, 2020, to March 30, 2020, followed by a mid-term break (Ministry of National Education [MoNE], 2022a). Education quickly resumed across all levels after the break (MoNE, 2022b). Subsequently, face-to-face education was intermittently conducted (MoNE, 2022c; MoNE, 2022d; Anadolu Agency [AA], 2022a), and a blended learning model was implemented for a period (AA, 2022b; MoNE, 2022e).

Blended learning model can be defined as the practice of face-to-face education and online/distance education together (Dağ, 2011). In other words, blended learning is the practice face-to-face and online/distance education together in order to make the learning process fruitful and flexible (Gilroy, 2001; Jumabaeva et al., 2020; Lago, 2000; Osguthorpe & Graham, 2003; Porter et al., 2014; Rasheed et al., 2020; Stein & Graham, 2014). Blended learning does not mean a limited case like using more technology in the class. According to Grupe (2002), it is the increase in distance education using various digital software by decreasing the number of face-to-face courses rather than increasing the technological possibilities of educational settings. In the blended learning is regarded as a modern teaching form because of its effectiveness in achieving flexible, timely, and uninterrupted learning (Porter et al., 2014). The use of blended learning has increased recently in every stage of education (Sloman, 2003), triggered the start of a new education period with the support of technology (Erdoğan, 2021) and according to some researchers of educational sciences, it has started to be regarded as “new normal in education” (Dziuban et al., 2018; Wut & Xu, 2021).

Blended learning has been extensively evaluated for its impact on various aspects of education. Studies consistently show that it enhances student success (Korkmaz & Karakus, 2009; Korkmaz & Kadirhan, 2020; Uluyol & Karadeniz, 2009; Yılmaz, 2018) improves athletic skills (Çakıt & Karadeniz, 2020), and increases active student participation in courses (Hastie & Curtner-Smith, 2006). Additionally, blended learning has been found to contribute positively to reading courses, facilitating deeper engagement in learning activities (Jumabaeva et al., 2020). The

primary focus of these studies has been on academic achievements and course effectiveness, often overlooking broader implications for younger learners.

Recent research further supports these findings and extends them to different educational contexts. Dikmen (2021) demonstrated that blended learning environments enhance teachers' social, cognitive, and instructional presence, particularly in programming education. Hiğde and Aktamış (2021) highlighted the positive impact of blended learning on student attitudes towards online learning, despite the presence of technical issues. Türker (2021) and Diana et al. (2022) emphasized blended learning's ability to provide personalized feedback, accommodate individual learning differences, and create a supportive communication environment between teachers and students. Finlay et al. (2022) found that sports students in the UK responded more favorably to blended learning, appreciating the opportunities it offered for practical application. Similarly, Prifti (2022) observed that blended learning improved students' self-efficacy and satisfaction, particularly in a higher education setting.

This study stands out by focusing on the largely unexplored area of blended learning in early education, particularly in preschool and primary settings. These stages are crucial for children's development, and the role of teachers in shaping foundational skills and attitudes is paramount. By examining the experiences of these educators, the research provides unique insights into the practical challenges and benefits of integrating technology and innovative teaching methods with young learners. This approach not only fills a gap in the existing literature but also offers valuable implications for educational practices and policies. To investigate the experiences and views of preschool and primary education teachers in blended learning, the following questions were addressed:

1. What do they think of the applicability of blended learning model in preschool / primary education?
2. What do they think of the advantages and disadvantages of blended learning model in terms of teachers?
3. What do they think of the advantages and disadvantages of blended learning model?
4. How do they practice blended learning model?
5. What kind of challenges did they encounter while practicing blended learning model?
6. Do they need education on blended learning, if they do, what must be the content of this education?

## Method

The research was designed according to case study, a qualitative research approach. Case studies are carried out to make a deep investigation using the elements (place, person/s, process etc.), qualitative data collection tools (observation, interview etc.) affecting the case and to determine the details regarding the case (Creswell, 2014; Yıldırım & Şimşek, 2016). In this study, a case study approach is appropriate because it allows for an in-depth exploration of the specific context in which preschool and primary education teachers in Ankara experience blended learning. This method enables the collection of rich and detailed data on the practical applications, challenges, and benefits of blended learning as perceived by the teachers, providing valuable insights into their educational practices and the contextual factors influencing their experiences.

### Participants

Which teachers would participate in the research was determined by using the criterion sampling model, which is one of the purposive sampling methods. Purposive sampling is to make a deep investigation by choosing rich cases in terms of information depending on the purpose of the study (Büyüköztürk et al, 2018). In accordance with the criterion that teachers are the primary school and preschool teachers having an experience in blended learning model, the working group was made up of 14 preschool teachers, and 15 primary school teachers teaching at 1-4 grades working in the city of Ankara. Preschool and primary school teachers were included in the study simultaneously because the early educational stages are foundational in children's development. This approach allows for a comprehensive understanding of how blended learning is applied across different age groups in early education. Professional seniority of the teachers varied from 7 to 25 years. Detailed personal information regarding the participants is given in Table 1.

Table 1. Personal information of participants

	n	%
<b>Branch</b>		
Preschool	14	48
Primary school	15	52
<b>Gender</b>		
Woman	21	72
Man	8	28
<b>Age</b>		
20-30	12	41
31-40	8	28
41-50	7	24
51 and over	2	7
<b>Professional Seniority</b>		
1-10 years	11	38
11-20 years	9	30
21-30 years	8	28
31 years and over	1	4
<b>Status of Education</b>		
Bachelor's degree	25	86
Master's degree	4	14

As given in Table 1, the working group was made up of 29 teachers, 48% in preschool (n=14), and 52% in primary school (n=15). As for the gender, 72% of the teachers were woman

(n=21) and 28% were men. Besides that, 41% were in the age group of 20-30 (n=12), 28% were in the age group of 31-40 (n=8) while 68% (n=20) had a professional seniority of 1-20 years with 86% were bachelor (n=25) teachers. In short, the distribution of the participant teachers was similar to each other, woman teachers were high in number, professional seniority outnumbered in the group of 1-20 years, and most of the teachers were a bachelor.

### **Data Collection Tools**

Before the study began, ethical consent was obtained from Nevşehir Hacı Bektaş Veli University. The data was gathered using semi-structured interview questions developed by the researchers after a literature review on blended learning. Three experts, lecturers in primary and preschool teaching with experience in distance and hybrid learning and educational technologies, reviewed the interview form. Based on their feedback, two questions were removed, and three new ones were added. A pilot interview with three teachers revealed some questions were unclear, so probing questions were included.

### **Data Collection and Analysis**

Participants were informed about the study and their consent was obtained. During the data collection process, necessary precautions were taken to ensure the data's security and confidentiality. Most of the data was collected through face-to-face or video calls, with a few conducted via telephone. The views of the teachers were coded as "P1, P2, P3, ..." for preschool teachers and "C1, C2, C3, ..." for primary school teachers to adhere to ethical rules. The teachers' views were shared in italic fonts.

The data obtained from the teachers were analyzed through content analysis. The data was coded in consistency with the nature of content analysis, themes were formed and evaluated (Yıldırım & Şimşek, 2016). To prevent bias in the data, it was examined by two researchers three times, significant parts were marked, and the codes obtained were noted down across the expressions. The repeating codes were evaluated with an inductive approach, and themes were formed.

### **Validity and Reliability**

To ensure the reliability of the research, direct quotations from the obtained data were used, and multiple researchers participated in each phase of the study. Additionally, the Miles and Huberman formula was applied. This formula defines reliability as "agreement / (agreement + disagreement)." The calculations revealed that the reliability was 88%. Miles and Huberman (1994) consider reliability rates of 70% and above to be reliable. The high similarity in the codes (88%) indicates a high level of reliability in data coding. Although the initial coder similarity was 88%, discussions continued until full consensus was reached throughout the study. To ensure the validity of the research, expert opinions were obtained, data were collected through long-term and detailed interviews, and the stages of the research were described in detail.

### **Ethics committee approval process**

The ethics application for the study was made on 07/05/2021 and the research was carried out with the approval of Hacı Bektas Veli University Ethics Commission dated 14/06/2021 and numbered 2021.07.221.

## Results

In this part, the findings of the research questions formed to investigate the views of preschool and primary education teachers regarding blended learning were given in order and evaluated. The first question of the research was “What do the preschool and primary education teachers think of *the applicability of blended learning model in preschool / primary education?* The findings obtained by means of the questions asked to the teachers to answer this question were gathered in the theme of “the applicability of blended learning model in basic education”. Sub-themes and frequencies regarding the theme of applicability of the blended learning model in basic education were given in Table 2.

Table 2. Sub-themes and frequencies regarding the theme of applicability of the blended learning model in basic education

Main Theme	Sub-Themes	f
<b>The Applicability of the Blended Learning Model in Basic Education</b>	<b>Non-applicable</b>	
	It cannot be applied in preschool and 1 <sup>st</sup> and 2 <sup>nd</sup> grades of primary education	11
	Students in this age do not have basic skills yet	3
	It is necessary to teach the student by showing personally	2
	It cannot be applied without parent support	2
	Children in this age should learn by experiencing	2
	Children in this age cannot keep up with blended learning technology	2
	Games and activities are of vital importance in this period	2
	It is difficult to apply blended learning with old-age teachers	1
	Contact is important in preschool	1
	Distance education prevents socialization of students	1
	<b>Applicable</b>	
	It can be applicable in the 3 <sup>rd</sup> and 4 <sup>th</sup> grades of primary education	6
	It can be applied as face-to-face for four days and in distance form for one day	6
	It can be applied very easily in primary education	6
	It can be applied in preschool education	5
	Games and activities, face-to-face cognitive outcomes can be given online	3
	It can be applied as face-to-face for three days and in distance form for two days	2
	Students in 3 <sup>rd</sup> and 4 <sup>th</sup> grades have the skill of using technology adequately	2
	Duration should be adjusted according to age level	2
It can be applied if teachers are trained in this case	2	
It can be applied easier with educated parents	1	
Parents should be trained on blended learning	1	

As given in Table 2, some teachers pointed out that blended learning cannot be applied in preschool and primary education known as basic education while some others indicated that it can be applied. Those having the idea that it cannot be applied expressed that it would particularly be difficult to apply blended learning in preschool and first and second grades of primary education. As for the participant views regarding that it is difficult to apply blended learning in basic education, it was pointed out that students in this age do not have basic skills yet, it is necessary to teach the student by showing personally, children in this age should learn by experiencing, games and activities are of vital importance in this period, contact is important in preschool and that distance education prevents socialization of students. Some of the answers given by the participants regarding the “non-applicable” sub-theme of “can blended learning be applied in basic education” theme is given below:



*“It is not possible to apply it in the first and second grades of primary education, since you should teach this age group by showing and making them experience personally” (C2).*

*“It might be applied at children, but I cannot do it much. I am an advanced age person. Some younger friends say that they can do it better. They are telling something, but I cannot understand it much” (C5).*

*“I do not find it applicable particularly in preschool and in the first years of primary education, because this young age group do not have the developmental characteristics to sit and listen in front of technological devices for minutes with a concentration. In addition, game is the most important method used in this period, and it would be more difficult to make the play games through distance education” (P17).*

Some other participants argued that blended learning could be applied both in preschool and primary education. It was pointed out by the participants that the students particularly in the 3<sup>rd</sup> and 4<sup>th</sup> grades of primary education have a high technological adaptation and blended learning can easily be applied to the students in this age group. It was also indicated that planning it as a face-to-face education for three or four days a week and a distance education for one or two days a week would increase the applicability of blended learning. The participant also pointed out that giving education to both teachers and parents on blended learning would increase the applicability of this education model. Some of the answers given by the participants as to the fact that blended learning model can be applicable are given below:

*“It can be applied in 4th grade. Children have the skill of using technology adequately” (C4).*

*“It can be applied in preschool period. It can be applied as a face-to-face education for four days and a distance education for one day. I would plan and inform parents at the very beginning of the educational year about blended learning process. Parent involvement is necessary, particularly the parents at medium and low economic level and those having a child with an attention deficit. Parents have responsibilities in blended learning” (P11).*

*“It can be applied as face-to-face for three days and distance education for two days” (P13).*

As the second question of the research, the answers given to the question of “What do the teachers think of the advantages and disadvantages of blended learning model in terms of students and teachers?” were gathered under the theme of “evaluation of blended learning”. Sub-themes and frequencies regarding the theme of evaluation of the blended learning were given in Table 3.

Table 3. Sub-themes and frequencies regarding the theme of evaluation of the blended learning

Main Theme	Sub-themes	f
Evaluation of the Blended Learning	Advantages	
	Using technology more functionally	10
	Providing the possibility of digital material development	9
	Encouraging using digital materials	9
	Saving time	7
	Being more economic	7
	More active parent involvement to education process	3
	It offers new alternatives in assessment and evaluation	3
	Flexibility in course hours	2
	Disadvantages	
	Increase in workload, carrying it to family life, expecting everything from teacher	7
	Disorganization, not knowing what to do	7
	Challenges in classroom management	6
	Challenges in knowing technology and using it	5
	Difficulty in assessment and evaluation	2
	Being unable to use non-verbal expressions (gesture, mimic)	1
Unwillingness and weariness at teacher	1	
Not being able to produce digital materials	1	
Not being able to guide education according to individual differences	1	
Disadvantages resulting from non-involvement of parents to the education process	1	

The participants evaluating blended learning process applied in the pandemic period indicated that the highest benefit they obtained in this process was technology use and developing digital education materials. In this sense, the expressions of *“I didn’t think that I would be able to use technological devices in such a useful way”* (P4) and *“As far as I learned from my young colleagues, developing digital material was not so difficult”* (C10, with a higher seniority) could be commented such that blended learning applied in the pandemic period made a contribution to the professional development of teachers.

Another advantage expressed by most teachers was that they were able to spare more time for their daily affairs on the days when distance education was applied in blended learning model, they did not have to endure the traffic of the metropolitan city and that they were able to save both time and economy since they did not go to school every day. The participant “C14” pointed out that *“It is likely to say that it is more advantageous for teachers in terms of both time and transportation costs”*. In addition, participants indicated that increased active involvement of parents, flexibility in the course hours and developing new alternatives in the assessment and evaluation were among other advantages of blended learning.

It was indicated that the increase in the workload and the discomfort felt from carrying work to family life were among the disadvantages concerning blended learning. Particularly woman teachers having a young child expressed that they got tired for that reason and that they could not spend qualitative time both to their job and to their children. Another disadvantage given by the teachers was that they found themselves insufficient regarding how to carry out blended learning in its most effective way. Besides that, the fact that teachers had difficulties in technology use and that they felt themselves insufficient in classroom management were among the frequently expressed disadvantages. In addition, not being able to produce digital materials, not being able to guide the education depending on individual differences and the challenges caused by the



involvement of parent in the education process in a wrong way were the disadvantages given by the teachers. Some of the answers given by the participants regarding the “disadvantages of blended learning” sub-theme is given below:

*“... disorganisation, decrease in motivation based on the increase in workload and weariness come to the forefront” (P6).*

*“... it is difficult for the married and for those having children. It brought me a serious workload” (C11).*

*“I am in difficulty with what students learn and what they do not. I would not prepare for the courses before. I thought that I would teach it in any case. Thinking that everybody would watch me particularly in the distance education part of blended learning, I spend more time for the preparation. It brings us a serious workload” (C12).*

The third question of the research was “What do preschool and primary education teachers think of the advantages and disadvantages of blended learning model in terms of students?”. The answers given to the interview questions were gathered under the theme of “blended learning in terms of students”. The sub-themes and frequencies regarding the theme of blended learning in terms of students are given in Table 4.

Table 4. The sub-themes and frequencies regarding the theme of blended learning in terms of students

Main Theme	Sub-Themes	f
Blended Learning in terms of Students	Advantages	
	Increase in technology using skills	7
	Possibility of partly resting at home	4
	Being more comfortable at home	3
	Increase in the possibility to work with the family	3
	Missing the school setting	3
	Increase in the attendance to school	3
	Positive development at children with a slow learning pace and introverted ones	2
	Opportunity to learn from different sources	2
	Easier access to teacher	1
	Being able to support what is learned at school with distance education	1
	Increase in adaptation to school	1
	Being able to complete unfinished activities at school with distance education	1
	Carrying on education in the vacant periods because of interruption of education	1
	Disadvantages	
	Computer insufficiency and connection problems	7
	Lack of motivation at school attendance	4
Lack of adoption by families for blended learning	4	
Screen addiction	2	
Spending more time with affairs out of courses	2	
Not being able to receive enough support from guidance service	1	

Table 4 indicates that participants view the benefits of blended learning for students as outweighing the drawbacks. Benefits include enhanced tech skills, partial home rest, increased family collaboration, improved attendance, positive development for various student profiles, diverse learning sources, better teacher access, and support for in-school learning. Downsides encompass tech insufficiency, connectivity issues, reduced school motivation, family hesitancy

towards blended learning, screen addiction, non-academic time use, and limited guidance support. Some participant responses on "student-oriented blended learning" are as follows:

*“Having one day distance education makes students be attached to school and increases missing. Insufficiency of computer at families with more children and connected might cause problems. Blended learning provides an advantage for children with a slow learning pace in cognitive sense.” (P1).*

*“They are happy as they carry school setting to home environment. They would miss the school when they are at home. It was hard for students to come to school every day. They felt easy in the distance part. Their wishes to go to school and attendance increased.” P13.*

*“Children play with the computer mostly and they do not listen what is taught. I tell the course on the book, but they would not listen to me much. I think they find it boring. I am talking about the distance education part. I do my course normally in face-to-face. Other days look like going for nothing.” (C15).*

The fourth question of the research was “How do preschool and primary education teachers practice blended learning model?”. The answers given to the interview questions were gathered under the theme of “the ways of practicing blended learning model by teachers”. The sub-themes and frequencies regarding this theme are given in Table 5.

Table 5. The ways of practicing blended learning model by teachers

Main Theme	Sub-Themes	
	Primary	f
	I planned difficult courses (Turkish, mathematics, science) as face-to-face and easy courses (life sciences, physical education, art etc.) as distance education	5
	I did the teaching of the course as distance and its exercises and application as face-to-face	4
	I tried to take family support	4
	I did not make any different application	3
	I tried to do what I did at normal education as methods and techniques in distance education as well.	3
	I made use of visuals and videos more in distance education	3
	I used more digital application	2
	I made use of Power Point presentations	1
The Ways of Practicing Blended Learning Model by Teachers	Preschool	
	Family support is of quite importance	8
	Group activities could be made face-to-face while individual ones could be made in distance education	7
	I did concept teaching face-to-face, but application in distance education	6
	I informed the parents about the materials to be used one day before.	5
	Language and science activities could be done in distance education, but experiments, trip, and observation in face-to-face.	4
	I did not make any change in methods and techniques	3

As shown in Table 5, the application methods of blended learning by preschool and primary education teachers display both differences and similarities. Primary school teachers preferred distance teaching with exercises and face-to-face application, while primary school teachers favoured face-to-face concept teaching and distance application. Both primary and preschool education teachers indicated a preference for teaching subjects like Turkish language, mathematics, and science through distance education, but opted for face-to-face instruction in courses like life sciences, physical education, and art. Family support was considered crucial by both groups for blended learning success. Preschool teachers also emphasized informing parents about preparation before distance education days. Additionally, some teachers in both groups maintained their teaching methods and techniques from regular education during the distance education period, without making changes. Below are some participant responses related to "the ways of implementing the blended learning model by teachers" theme:

*"... I tried to practice what I did in normal education in distance education as well. Perhaps, we were not able to learn at first how fast we carry on the course. However, we experienced which topic should be taught how long in time and made the program flexible" (C1).*

*"I planned it as difficult courses in face-to-face education and easy courses in distance education. I made more use of visuals and videos in the distance education part of blended learning" (C3).*

*"I would opt for methods and techniques that lend themselves well to distance education, like drama, material design, and painting, which can also be individually executed for planning. In terms of face-to-face teaching, I would select group games that are enjoyable when collaboratively undertaken. For me, executing group work in distance education might be more challenging, so I would consider group activities as classroom-based and individual tasks as suited for distance education" (P17).*

*"I was supported by the parents. I had challenges at first in the adaptation to distance education. I improved myself but students had hard times in distance education. By getting the support of the parents, we carried on the process by training them. Then, we had a fruitful period. I would pay attention to teach practical courses at school but the theoretical ones as distance education. I used the methods that had used in the class in blended learning as well with the support of technology" (C25).*

The fifth question of the research was "What kind of challenges did teachers encounter while practicing blended learning model?". The answers given to the interview questions were gathered under the theme of "the challenges teachers encountered in blended learning". The sub-themes and frequencies regarding this theme are given in Table 6.

Table 6. The challenges teacher’s encountered in blended learning

Main theme	Sub-themes	f
The Challenges Teachers Encountered in Blended Learning	Lack of technological devices for students	14
	Being insufficient by the teachers regarding technology use	9
	Problems experienced in classroom management	4
	Students’ inability in motivation	4
	Challenges of students in adaptation to school (absenteeism)	3
	Discomfort felt in the reveal of teacher’s privacy during the course	2
	Teacher’s young child at home	1
	Long teaching hours	1
	Teacher’s lack of motivation in courses	1
	Parental indifference	1
Young students’ not knowing what to do in full sense	1	

As given in Table 6, the mostly encountered problem in the question where the problems experienced in the application process of blended learning by preschool and primary education teachers and the ones observed by their colleagues was that students did not have a computer to join the course or cuts in the internet connection that would prevent the flow of courses. Besides that, some teachers indicated that their computers were rather old-fashioned and it was hard for them to renew them or as they had children having distance courses at home, they had problems in sharing computers. Another problem that basic education teachers frequently encountered in the application process of blended learning was that they felt themselves insufficient in terms of technological literacy in the distance education part of blended learning. In particular, those who were near to retirement indicated that they had challenges both in using technology in the distance education part of blended learning and in double planning (face-to-face + distance= of this process.

Teachers working particularly in the preschool and first stages of primary education in the distance part of distance education of blended learning pointed out that they had problems in terms of classroom management and student motivations. They also expressed that they had worries about that parent were always listening the course they were teaching and that they couldn’t obtain classroom management since they couldn’t make harsh warnings to the students in terms of discipline. Some participants indicated that their privacy during the courses in blended learning was harmed and they were uncomfortable about that. Another problem experienced in this process was that the students could not adapt to the school as they attended to both school and distance education. Some of the answers given by the participants regarding the “the challenges teachers encountered in blended learning” theme are given below:

*“Preschool children are young age children and they think everything in a concrete way, they cannot think in an abstract way” (P2).*

*“... They could misunderstand the words and behaviours of the teacher. Families are sometimes lack of technological devices, particularly large families. As for distance education, it is hard to motivate children for the courses” (C5).*

*“I am not so familiar with technology and my computer is old-fashioned. Brand-new computers are very expensive. I am not so good at it even though I buy it. It is very difficult to manage students in distance education courses” (C15).*

The sixth question of the research was “Do preschool and primary education teachers need education on blended learning, if they do, what must be the content of this education?”. The answers given to the interview questions were gathered under the theme of “educations to be given to the teachers”. The sub-themes and frequencies regarding this theme are given in Table 7.

Table 7. The sub-themes and frequencies regarding the theme of educations to be given to the teachers

Educations to Be Given to the Teachers	Content development	8
	Teaching methods and techniques	8
	Parent education	5
	Classroom management	5
	Use of Web 2.0 tools	5
	Family Involvement	4
	Communication	3

Twenty-six of the participants indicated that they wanted to have an education but three did not. Depending on this finding, it is likely to say that a great majority of the participants was willing to have an education on blended learning model and, they needed this education. The answers given to the question of “which items should be included in the education to be given?” by the participants were gathered under the theme of “the educations to be given to the teachers”. The sub-themes and frequencies regarding this theme are given in Table 7.

Upon the revision of the education that the participants wanted to have regarding blended learning model, it was found that their technical information and skills in hand were not available for this model, and they needed to renew their technical information and skills. In addition, it is likely to say that the participants were aware of this case, and they expressed it. Some of the answers given by the participants regarding “educations to be given to the teachers” are given below:

*“... I would like to learn blended learning better, since it is told that future education will in this way” (C9).*

*“Yes, I would. Teachers need this education. Subjects, planning the courses, using technology” (C2).*

*“Yes, I would. Teachers must have the education. Parents rather than teachers must have that education. It is because there are a great many parents who do not think positively over the distance part of blended learning. Teachers could be given education about technology use, managing the process, teaching methods, course planning, and access to children, and parent education.” (P12).*

### **Discussion, Conclusion and Implications**

With the analysis of the findings obtained in the research, it was found that teachers were confused about how to practice blended learning model, in other words, they did not know what to do exactly in this process. As an example, some teachers developed peculiar, blended learning models taking the age and grades of students, while some others did not do anything in this sense. It is thought that teachers needed education, particularly in the part of distance education of blended learning. It is because there is a need to knowledge of suitable planning (Haylock & Cockburn, 2014) and pedagogical methods and theoretical background (Van de Walle et al., 2010), and adoption of course and teaching design principles (National Council of Teachers of Mathematics [NCTM], 2000). However, because of urgency in the pandemic process, institutions were not able to find opportunities to plan this transition systematically to make an adaptation to new teaching and learning applications. As a matter of fact, what is ideal in a transition or a changing process is to invest in the precautions that would decrease challenges against professional development opportunities of institutions, research and data collection, capacity development and changing attempts (Rad et al., 2021). Upon the revision of the related literature, it is likely to see



that these challenges are not only experienced in basic education stages but also in higher education. In a study by Singh et al., (2021), it was found that Covid-19 pandemic process had significant challenges upon lecturers, students and administrator and it affected almost all the academic staff; technological fear, limited software knowledge, time management problems and feeling of loneliness created challenges for the lecturers at universities.

Upon the analysis of teacher views, it was found that family support is needed more to be able to apply blended learning at all stages of basic education successfully. For that reason, it is believed that parents must be given education to inform about blended learning. In their study, Barnett and Jung (2021) indicated that parents were not able to make necessary support to the educational process of their children, their efforts (e.g., the number of books they read) regarding the support they made for the personal development of their children decreased, and it led to possible learning losses in pandemic period.

Depending on the findings of study, it is likely to say that teachers try to increase their developments in technical fields such as technology literacy and producing digital content thanks to blended learning. In addition, providing with the opportunity of saving time and acting more flexibly in running the courses gives advantages to both teachers and students. On the other hand, students get accustomed to using technology for educational purposes and they have chances to learn from more different sources. This case that was determined in the study supports various studies in the literature. Studies show that blended learning increased the success of students (Gürdoğan & Bağ, 2019; Junco et al., 2011; Korkmaz & Kadirhan, 2020; Rovai & Jordan, 2004; Uluyol & Karadeniz, 2009; Ünsal, 2010; Usta & Mahiroğlu, 2008; Yılmaz, 2018), supported active involvement of students to learning processes (Junco et al., 2011; Yılmaz, 2018), provided easy access to information and enriched learning experience to students (Singh & Reed, 2001; Stein & Graham, 2014; Yıldırım & Vural, 2016), became more economic (Singh & Reed, 2001; Stein & Graham, 2014)), and was useful for the prospective teachers having difficulty in expressing themselves verbally (Alhan, 2019). It was determined in a study carried out with prospective teachers by Hiğde and Aktamış (2021) that participants found face-to-face learning settings more effective compared to online setting, and they also thought that having the chances of watching videos again and of saving time were the positive sides of distance education. Gürdoğan and Bağ (2019) pointed out that students found blended learning applications fun, it provided permanency in what they learned, varied learning and gave a chance to watch the videos again.

One of the positive experiences of teachers regarding blended learning was that some introverted and shy students mostly overcame these challenges in the distance education courses, in other words, they their social sides gained strength when they came to face-to-face education. This finding is parallel with the study by Xie et al. (2020). In this study, because online education was designed to focus on the educational demands of individual students by nature, it could be advantageous for the students who are socially weak and in cooperation. Singh et al. (2021) carried out research to determine the facilities, challenges, strong and weak sides of education software platforms for students. In this study, it was determined that self-sufficiency, self-awareness, and self-esteem of the student were affected positively thanks to blended learning experiences.

One of the results obtained through the analysis of the findings of the current study was that insufficiency of the infrastructure regarding the provision of technological equipment and the internet was one of the most important reasons making blended learning difficult. Both students and teachers have challenges in this sense. This case causes an important problem in providing



social justice in education (Cho, 2021). Xie et al. (2020) indicated that the insufficiency of technology and infrastructure with the compulsory process of distance education deepened inequalities in education more, and particularly underdeveloped countries were influenced badly in this fact. Similarly, Barnett and Jung (2021) found in a study carried out to investigate the effects of pandemics on preschool education in the USA that 51% of the children at the age of 3 and 71% of those at the age of 4 participated in preschool education before pandemic, but a 25% dropped was seen in the pandemic process including students participating in distance education. In addition, there became sharp decreases in the general participation and particularly face-to-face participation of the children in poverty (known as the families have an annual income under 25.000 dollars). It was found that only 13% of the children in the families in this economic level were able to participate in preschool education.

Carrying the office home and turning home into school in terms of students is one of the important reasons making blended learning more difficult to conduct. Teachers expressed that they found it hard to motivate both themselves and students in the courses while practicing blended learning. It was found that teachers had challenges in classroom management, adapting students to the course and producing contents. This result is parallel to some studies in the literature. As an example, Rasheed et al. (2020) and Wut and Xu (2021) indicated in their studies there were some challenges regarding using technology true and effectively in teaching processes, while Burke and Dempsey (2020) with Sarıdaş and Topdağı (2021) emphasized that teachers must be supported to overcome the insufficiencies in digital literacy. Similarly, according to Xie et al. (2020), students could easily be distracted by social chats, news, or games in online education. Some students cannot complete their school activities because there is no teacher to encourage and remind them their tasks and overcome their lack of motivation. The case of home and expectation cannot be taken into consideration during blended learning. It is because students can be in trouble since they have to look after family member (siblings, elderly, or patients).

It is likely to say that teachers agreed on the fact that blended learning is not suitable in the distance education part, particularly at the first and second grades of primary education with the preschool stage. Similar findings were found in a study by Cao et al. (2021) in a study carried out into the effects of teachers in China on the mathematic teaching in online teaching process during Covid-19 pandemic process. In this study, it was determined that distance education made mathematics teaching difficult particularly for the lower grades. In online teaching, as each student participated in the courses with their own devices, teachers had challenges in grouping students and arranging classroom activities, and they pointed out that distance education was not much suitable for young age group. The authors of the well-known book “Understanding Mathematics for Young Children”, Haylock & Cockburn (2014) indicate that some hard to teach subjects could be taught easily to the students in this age group by using classroom activities, discussions, and some methods comprising peer cooperation.

It is likely to say that parents who cannot take necessary care of the education of their children is another factor making blended learning harder. In their study, Barnett and Jung (2021) found that parents from USA were less contented from distance education in preschool period, teachers were bored of the demands of supporting distance education, and childcare and education process affected work life negatively. This limitation in young age groups comes to the forefront as insufficiencies of technological literacy for the students in older age groups. According to Lake and Makori (2020), even though most students regard themselves as “digital natives” today, a great many of them, particularly young students, still need supports to overcome the problems of becoming online, and of technical troubles as well.

## **Effects regarding theory and application**

The study provides comprehensive insights into the theory and application of blended learning. Initially, it explores the blended learning model, which is perceived as restructuring the fundamental operations of the educational system within schools. It emphasizes the importance of considering students' developmental levels, particularly in early education settings such as preschool and primary education, when implementing the blended learning approach. Moreover, the study highlights the crucial role of school administrators in effectively managing various aspects of education management, including planning, coordination, organization, communication, and supervision, within the context of blended learning.

During the Covid pandemic, the adoption of the blended learning model led to significant challenges for teachers as physical classrooms transitioned to virtual settings. Teachers' technical competencies developed in traditional classrooms may not be as effective in virtual environments. Consequently, there is a growing necessity for teachers to enhance their technical skills, including planning virtual courses, creating activities and content, utilizing technology, managing virtual classrooms, and facilitating communication.

While blended learning offers numerous advantages for educators, students, and parents, it also presents certain drawbacks. The study aims to identify and evaluate both the benefits and limitations associated with blended learning.

Additionally, the study highlights that while blended learning offers flexibility, models prioritizing face-to-face instruction may be more suitable for younger learners, particularly in early education settings. The findings emphasize that the success of blended learning relies not only on the structure of the model but also on the teacher's ability to effectively integrate technology and adapt to both virtual and physical classroom environments. This adaptability is crucial for addressing the unique developmental needs of preschool and primary school students, ensuring that educational methods remain effective and engaging across different learning contexts.

## **Limitations and research recommendations**

The current study is a qualitative study carried out with a small participant group made up of teachers working in preschool and primary education in Ankara in Türkiye. For that reason, the results cannot be generalized with larger samplings. It is recommended that future studies should be carried out with the support of quantitative research methods having larger samplings. Samplings from the cities in different sizes could be chosen. The results of the studies investigating how blended learning is carried out in the student groups with older ages as in secondary education and university could be compared with the results of the current study.

The contents of the courses given to prospective teachers in the faculties of education could be rearranged in a way to increase the competencies in distance and blended learning applications. Policy makers could be recommended to carry out studies regarding how to apply blended learning at schools by taking the results of the current study into consideration. It is also recommended that teachers teaching in preschool and first and second grades of primary education should teach in distance education for one day while applying blended learning, and those teaching in the second and third grades should teach in distance education for two days.

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### **Conflicts of Interest**

The authors declare that there is no conflict of interest.

### **Ethics**

The ethics application for the study was made on 07/05/2021 and the research was carried out with the approval of Haci Bektas Veli University Ethics Commission dated 14/06/2021 and numbered 2021.07.221.

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