Turkish preservice teachers' experiences with emergency remote teaching: A phenomenological study

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This research studies the lived experiences of preservice teachers who were provided with emergency remote teaching due to the Covid-19 pandemic. It is a qualitative study employing a phenomenological design. The participants were 24 preservice teachers studying at Usak University, a state university in Turkey. The data were collected through phenomenological interviews and subjected to phenomenological analysis. As a result, four themes emerged: successful implementation factors, challenges, opportunities, and suggestions for improved learning. It was revealed that preservice teachers experienced pedagogical, technological and social-emotional challenges which far outweighed the opportunities, such as sustainability of education and flexible assessment approach.

Introduction

In Turkey, as is the case in many other countries, higher education institutions have experienced a rapid rate of change since universities were closed due to the Covid-19 pandemic around mid-March 2020. As a result, universities moved to online learning to cater for students' learning needs as this was the safest option in this situation. However, this shift to online learning seems to be a quick response to the crisis instead of a planned model. Hodges et al. (2020) call it "emergency remote teaching (ERT)", a way used to sustain education in almost all countries (Bozkurt & Sharma, 2020).

ERT has been described as a temporary use of fully remote teaching solutions for teaching that would otherwise be delivered face-to-face or as blended or hybrid, and that will return to that model once the crisis or emergency has ended (Hodges et al., 2020). Contrasting to this, online teaching is a well-designed approach, perhaps planned over several months before offering the course with no physical interaction in a classroom environment that nevertheless enables deep virtual learning experiences (Schultz & DeMers, 2020). Accordingly, ERT is a temporary though necessary mode of teaching, while online teaching is a choice that provides lasting and permanent solutions within the framework of lifelong learning (Bozkurt et al., 2020). Whilst online teaching requires careful instructional design and development, a similarly attentive design process is likely to be absent in ERT because of the emergency situation (Alshehri et al., 2020; Hodges et al., 2020). In addition to deficiencies in prior planning and design, ERT does not focus on an integrated environment of interconnected factors and creating a learning community, but provides a temporary online solution (Alshehri et al., 2020).

Universities have put much effort into dealing with the Covid-19 crisis by turning to online learning. However, during this process, both students and educators have experienced major challenges. Educators were faced with the obligation to change established practices quickly, requiring pedagogic agility, defined as instructors' flexibility in making decisions regarding practices for a new learning environment in quick but meaningful ways (Kidd, 2020; Kidd & Murray, 2020) and willingness to change (Quezada et al., 2020). Most of these educators learnt about online and remote teaching tools and strategies during that process (Trust & Whalen, 2020). In addition, students' reported challenges included motivation and effectiveness (Tang, Abuhmaid, Olaimat, Oudat, Aldhaeebi & Bamanger, 2020), lack of technological devices and poor or no Internet access (Alvarez, 2020), and lack of emotional and social support (Hadar, Ergas, Alpert & Ariav, 2020).

The mentioned challenges were relevant for all programs in higher education, but particularly challenging for teacher education which includes practice-based courses such as teaching practicum (Flores & Gago, 2020). In this study, experiences of preservice teachers who were studying at a Turkish university and provided with ERT due to pandemic are disclosed. As a result of this study, it may be possible to derive some important lessons from learners' experiences, for both teacher educators and Higher Education Council officials in Turkey.

Literature review

Online teacher education before Covid-19 and ERT during Covid-19

Literature review on online teacher education before Covid-19 mostly focused on preservice teachers' satisfaction with online learning and perceptions regarding their learning experiences (He, 2014), comparing online and face-to-face teacher education (Daves & Roberts, 2010), factors impacting on success in online teacher education (Thompson, Miller & Franz, 2013), motivating factors (Banegas & Manzur Busleiman, 2014), engagement (Pittaway & Moss, 2014; Tomas et al., 2015) and educators' readiness to teach online (Downing & Dyment, 2013).

Among these studies, He (2014) unearthed that preservice teachers' online learning and teaching confidence and self-efficacy increased after an online course and they identified pacing and flexibility as the benefits of online learning and teaching, but they had concerns regarding lack of interaction between students and instructors, technological problems, immediate feedback and assessment. In addition, Daves and Roberts (2010) compared online and face-to-face teacher education and revealed no significant differences between preservice teachers' satisfaction with their learning experiences and their perceptions regarding social connectedness. Thompson et al. (2013) compared online and face-to-face learning experiences by using Communication of Inquiry framework that blends cognitive presence, teaching presence and social presence. As a result, it was disclosed that establishing teaching presence by employing authentic instructional strategies and building social presence between students and instructors supported online course success. Unlike these studies, Downing and Dyment's (2013) study focused on teacher educators' readiness to teach fully online and their perceptions regarding preparing preservice teachers, finding that a majority of the teacher educators showed low confidence and competence in terms of technological and pedagogical skills, and they had mixed opinions about how to prepare preservice teachers for teaching in an online environment.

A review study on online teaching in teacher education by Carrillo and Flores (2020) revealed engagement of learners and instructors in the affective domain was central to meaningful online learning, and connections with cognitive and teaching presence were crucial to enhance the impact of learning. Another review study conducted by Dyment and Downing (2020) disclosed technological pedagogical innovations and students' experiences were the most common themes, and two emerging themes were teacher educator experiences and online teaching in specific discipline areas.

Studies related to ERT conducted in teacher education during Covid-19 are increasing, depending on the novelty of the situation. Some theoretical studies (e.g. Flores & Gago, 2020; Osman, 2020) focused on explaining how teacher education was conducted in a specific country or university. Flores & Gago (2020) stated that student teachers in Portugal had to follow their cooperating teachers' activities online for practicum. Moreover, some research studies (e.g. Kidd & Murray, 2020; Sepulveda-Escobar & Morrison, 2020) focused specifically on how teaching practicum was implemented online.

Furthermore, some practical studies were implemented in order to identify challenges and opportunities of ERT from teacher educators' perspectives (Almaiah, Al-Khasawneh & Althunibat, 2020; La Velle, Newman, Montgomery & Hyatt, 2020; Nasri, Husnin, Diyana Mahmud & Halim, 2020; O'Brien et al., 2020). For instance, Almaiah et al. (2020) indicated that the challenges were change management, technical issues and financial support, and the main factors affecting the successful use of an e-learning system were technical factors, system quality, culture factors (ICT literacy and being e-society), self-efficacy and trust factors (system protection and information privacy). Besides, La Velle et al. (2020) found that all universities adopted a 'no detriment' policy that no trainee would be disadvantaged, so innovative approaches such as trainees recording their teaching and getting peer feedback, microteaching through online systems were utilised. Besides, Nasri et al. (2020) revealed that some pedagogical issues were different from face-to-face instruction, such as students' refraining from doing collaborative group work and posing questions during online instruction.

In addition, other research studies focused on preservice teachers' experiences. For example, Rahiem (2020) revealed that students were content with the flexibility of time and learning; however, they were dissatisfied with the use of limited media and methods to implement learning, overloaded assignments and trouble in reaching learning materials. Similarly, Alvarez (2020) conducted a phenomenological study to identify the lived experiences of university students and revealed that poor or no Internet access, financial constraints, lack of technological devices and affective or emotional support were the challenges faced. Unlike these studies, Hadar et al. (2020) investigated social-emotional competencies of preservice teachers and indicated that they did not receive enough preparation in the domain of social-emotional competencies during the Covid-19 crisis.

Although there is a growing body of research (e.g. Alvarez, 2020; Hadar et al., 2020; Rahiem, 2020) in the literature focusing on preservice teachers' experiences with ERT, a limited number of studies was found in Turkish context (Er Turkuresin, 2020). Thus, this research seeks to explore the experiences of Turkish preservice teachers related to ERT

conducted within the framework of teacher training. This is a significant issue because due to the pandemic, emergency remote teaching is still being carried out in many countries and might again be conducted in the future in case of an emergency. The research aims to fill in the gap in the literature by reporting Turkish preservice teachers' lived experiences studying in different departments of an education faculty. In addition, this research aims to shed light on what it is like being a teacher candidate in this situation. Findings of the study are expected to provide substantial information specifically to Higher Education Council officials and teacher educators. Accordingly, the research addresses the following research question:

What can education faculty in Turkey learn from their students' experiences with emergency remote teaching?

Method

Research design

The research employed a phenomenological design which is a type of qualitative research. In a phenomenological study, participants depict a concept or phenomenon that they experienced and the researcher describes the common meaning of this concept or phenomenon (Creswell, 2013). The key point for the researcher in phenomenological study is to try to understand how people experienced a specific phenomenon from each person's own perspective, by entering the inner world of each participant (Johnson & Christensen, 2014). The phenomenon in this research is ERT. This phenomenological study examines the lived experiences of preservice teachers who were provided with ERT due to the Covid-19 crisis.

Context of research

The context for this research is Usak University, a state university in Turkey. In the spring semester of 2020, after four weeks of face-to-face instruction, the whole university was forced to start ERT on 30 March, 2020, upon closure of Turkey's universities on 13 March, 2020, due to the Covid-19 pandemic. Courses were conducted in *Google Classroom*. The instructors were asked to do synchronous teaching for each course weekly and had to load learning materials such as *PowerPoint* slides or PDF files for learners. However, there was no obligation for learners to follow the course synchronously. Some information about the implementation of practice-based courses during ERT is provided in Appendix 1.

Participants

The participants were 24 preservice teachers studying in different Departments of Usak University's Faculty of Education. Demographic profiles of participants can be seen in Appendix 2.

The participants were selected by a purposive sampling method. The reason why these participants were chosen was ease of data collection, important because of Covid-19

restrictions. Another reason was that the researcher aimed to reach second, third and fourth year preservice teachers studying in a four year program for their initial teacher education qualification, since they had more extensive previous learning experiences in face-to-face courses, and therefore could better compare two modes of teaching and learning. First year preservice teachers were excluded since they had face-to-face learning experience for only one semester. Lastly, preservice teachers were chosen as it was necessary to seek their perspectives as a future teacher and how a teacher/instructor should be conducting such a process.

Data collection

The research data were collected in June 2020. In line with the research design, this study used phenomenological interview as the method of data collection. In this type of interview, the researcher first explores his or her own experiences both to examine dimensions of the phenomenon and become aware of personal viewpoints, prejudices, and assumptions. Then, by avoiding prejudices and assumptions, the researcher focuses on the essence of the meaning of an experience (Merriam, 2009). These principles were taken into consideration by the researcher during interviews.

In order to illuminate preservice teachers' lived experiences about ERT, a total of fourteen questions were prepared. Two experts specialising in curriculum and instruction were consulted to receive feedback on the draft interview form. As a result of their suggestions, similar and vague questions were excluded and the final interview form included nine questions (Appendix 3). Interviews, conducted via *Google Meet*, lasted 50 to 60 minutes and were recorded for transcription.

Data analysis

The qualitative data were subjected to phenomenological analysis. Phenomenological analysis seeks to identify the meaning, structure, and essence of the lived experience of a phenomenon for participants (Patton, 2002). In conducting phenomenological analysis, the following stages as suggested by Creswell (2013) were followed: 1. Description of personal experiences with the phenomenon; 2. Listing significant statements in the interviews (horizonalisation of the data) and treating all data as having equal weight; 3. Grouping data into units or themes; 4. Describing what the participants experienced (textural description); 5. Describing how the experience happened (structural description); and 6. Integrating both textural and structural description.

In addition, internal reliability (consistency), external reliability (verifiability), internal validity (credibility) and external validity (transferability) were taken into consideration (Merriam, 2009). In this study, two experts checked the codings and inter-coder reliability was calculated according to Miles and Huberman's (1994) formula (reliability = agreement / (agreement + disagreement) x 100), which was found as .89 and .91 between experts and the researcher, and .86 between two experts, indicating high internal consistency. In order to ensure verifiability, data collection and analysis were explained in detail and the findings were presented without bias. Member checks were also used for credibility,

participants were asked to control the interview transcripts and emerging findings. Besides, maximum variation in the sample and thick description (detailed description of the setting and the findings) were used to enable transferability.

In order to protect privacy of the participants, codes were used, for example E1 representing first preservice teacher in Elementary Teaching department; M6 representing the sixth preservice teacher in Mathematics Teaching department; etc.

Results

The findings were categorised under four themes (successful implementation factors, challenges, opportunities, and suggestions for improved learning), 13 sub-themes and 46 codes, as shown in Tables 1 to 4.

Successful implementation factors

The sub-themes and codes of successful implementation factors for ERT are shown in Table 1.

Theme	Sub-themes	Codes	
Successful	Student-related	Students' readiness	
implementation		Taking responsibility of one's own learning	
factors	Family-related	Financial support	
		Emotional support	
	Instructor-related	Instructors' agility	
		Solution-oriented behaviours	
		Readiness to teach online	
	Learning management	Easy-to-use	
	system	Strong infrastructure	

Table 1: Sub-themes and codes for successful implementation factors of ERT

Preservice teachers declared that students themselves, family, instructor and learning management system impacted on successful implementation of ERT. Preservice teachers believed that students' readiness facilitated implementation of ERT. In that sense, a student's motivation and technology knowledge were needed during ERT.

Success depended on the student ... her/his interest, participation and doing assignments regularly ... we can drink coffee or watch Netflix in the background (E4).

Preservice teachers also believed that taking responsibility of one's own learning was more important in ERT.

Now the burden is more on the student. If we want to learn, we should search or we should compensate for our incompetency. One should have put more effort and participated actively during this process. (M8)

Preservice teachers also believed that family-related factors such as financial and emotional support were vital during that period.

My family supported me both emotionally and financially and relieved when I felt stressed. (T4);

Family's financial situation was vital in terms of accessing internet from homes. (S6)

In addition, preservice teachers stated that some instructor-related factors such as instructors' pedagogic agility had impact on the success of ERT.

The instructors showed agility ... most of them adapted to the new system easily and used [it] well though they did not use such a system before. (E1)

In addition, instructors' solution-oriented behaviour during that period facilitated the process.

Instructors' behaviour was solution-oriented ... if a problem arose, they handled it instantly. (M3);

Once an instructor could not do live session, he later recorded and put it on *YouTube* and we watched it there. (T1)

Preservice teachers also drew attention to instructors' readiness, namely their motivation to teach online, technology knowledge and technological pedagogical knowledge.

Our instructors were really motivated ... most did their best. (S3); Instructors should have technological and professional knowledge as well know how to teach well by using technology ... Since instructors are lecturing, they should get us comprehend key words of the topic well. (T2)

Lastly, it was revealed that preservice teachers found the learning management system was an important factor impacting on their success.

Our online system was much better compared to other universities. It was practical ... Technical infrastructure was also very good. (M9)

Challenges

The four sub-themes and codes of challenges are shown in Table 2.

Most of the challenges preservice teachers depicted were pedagogical challenges. They expressed their complaints about long live sessions lasting more than an hour.

It was an hour approximately and sometimes longer ... Since our curricula are loaded, it is too much for us. **(**T3)

Preservice teachers also complained about overloaded assignments.

Too many assignments ... almost 10 times in comparison to face-to-face. (M3); We were bombarded with assignments, which bored us a lot. I was overstressed because we were unprepared for pandemic psychologically. (S1)

Theme	Sub-themes	Codes
Challenges	Pedagogical	Long live sessions
		Overloaded assignments
		Time management
		Ineffectiveness of some courses
		Lack of practice
		Lack of variety in teaching method
		Lack of interaction
		Unreliable online exam results
		Lack of learning materials
	Technological	No or limited internet connection
		Lack of technological equipment
		Students' lack of technological knowledge
		Instructors' lack of technological knowledge
	Emotional and social	Lack of face-to-face interaction
		Lack of emotional support
		Getting mechanical
	Other	No libraries nearby
		Having to buy many books
		Inappropriate home environment

Table 2: Sub-themes and codes of challenges

Preservice teacher also reported having time management problems.

I had time management problems since I had to make a lot of research to do the assignments. (E2)

Furthermore, it was revealed that preservice teachers studying in the Department of Elementary Mathematics Teaching had more challenges than those in other departments. They expressed their complaints about the ineffectiveness of their field course. Since they could not solve problems online, the course aims were not realised sufficiently.

- Mathematics field courses are conducted through lecturing instead of problem solving method, which makes us aggrieved. (M9);
- We don't comprehend how the problem was solved on the slides. (M5);
- Mathematics instructors aren't used to teaching mathematics through lecturing ... normally the courses were practice-based; however, now we don't solve different problems to understand the topic better. (M8)

Another challenge preservice teachers faced was lack of practice in some practice-based courses such as *Society Service Practices* and *Teaching Practicum*.

During face-to-face part of Society Service Practices course, we did an activity on women's day and we had also some other plans; however, we couldn't do practice any more later. We were asked to watch films, read books and summarise them as assignments. (M2);

Unfortunately, we just could do Teaching Practicum for three weeks. Then, we just prepared some assignments and had a weekly live session with the course instructor. (S1)

Preservice teachers also reported that lack of variety in teaching methods was a challenge for them and added that only lecturing method was used.

This platform may provide us with various opportunities; however, only lecturing and discussion methods were used. (E1)

Besides, preservice teachers noted they had challenges due to lack of interaction between students and the instructor.

We can't interact with instructors sufficiently...we can't ask how to do an assignment. (T4)

In addition, preservice teachers stated that online exams led to unrealistic results because of the unethical behaviors of some of their peers.

We had online exams; however, it wasn't clear who knew much more since it was easy to cheat online. (M2)

The other pedagogical challenge was seen related to the instructor. Preservice teachers stated that instructors did not provide sufficient learning materials for them.

Some instructors didn't provide materials for us. Also, they could suggest additional materials. (S1)

Another group of challenges preservice teachers faced was technological such as having no or limited internet connection and no technological equipment.

I live in a rural area and Internet doesn't work here, I can just access through mobile data, which is expensive. (E3)

Preservice teachers also reported that both instructors and they lacked sufficient technology knowledge.

I didn't have much technological knowledge. I had very hard times, I didn't know using Excel but we had to prepare an assignment on Excel. (M5); Some instructors can't use the system effectively. (S4)

Social and emotional challenges declared by preservice teachers were being unable to meet social and emotional needs because of lack of face-to-face communication and not getting enough emotional support since the instructors were anxious, as well.

I am back in social relations now and my emotional needs were not met online since we weren't in face-to-face communication ... the present situation, it also caused the instructors to be anxious, as well. (T5)

In addition, preservice teachers stated that they were having emotional challenges because of getting mechanical.

People are getting mechanical online. My peers are just voices for me, no images. (M7)

The other challenges were no libraries nearby, having to buy many books and inappropriate home environment.

We can't go to the library, thus we have to buy lots of books. (S2); I have a sibling with whom I share the same room so it is hard to participate in live sessions by microphone. (M1)

Opportunities

The three sub-themes and codes of opportunities are shown in Table 3.

Theme	Sub-themes	Codes
Opportunities	Pedagogical	Sustainability of education
		Learning materials provided by the instructor
		Assignments leading to deep learning
		Getting quick feedback to assignments
		Learning needs met
		Flexible assessment approach
	Technology-related	Recording of the live sessions
		Flexibility of time and place
	Personal	Increased readiness
		Increased problem-solving skills

Table 3: Sub-themes and codes of opportunities

Among pedagogical opportunities, sustainability of education was the most frequently stated opportunity.

At least we could still get education, everybody did their best. (T3); Of course, there were things to be improved but it was still sufficient with no available infrastructure before. (E2)

Moreover, preservice teachers told that they were provided with learning materials by the instructor.

Learning materials were shared with us before the course each week, which helped us to get prepared for the course. (M4)

While assignments were also shown as challenges, students stated that preparing assignments led to deep and permanent learning and they could get quicker feedback to the assignments compared to face-to-face instruction.

I understood this semester that learning through assignments instead of learning through exams was far better. Each week we had assignments to do especially in professional knowledge courses, which led to permanent and mastery learning. (S4); Instructors gave feedback to the assignments instantly. (E3)

Preservice teachers also stated that they had learning needs met in general, with the aims realised and course content covered. Preservice teachers believed that course aims were realised fully, especially in teaching profession courses.

Our professional knowledge courses are actually better than face-to-face instruction ... since they are recorded, we can watch them again later and revise the topic. (M3); The course content was fully covered and existing plans continued. (S2)

Preservice teachers also believed that it was necessary to cover the content fully during pandemic.

If we were younger students, I would say it wrong to cover the content fully since we would need psychological support more, yet we are adults and we will be teachers so it was good to continue teaching plans in order to support our professional development. (M4)

In addition, it was revealed that instructors had more flexible assessment approaches during ERT.

We got high grades from assignments surprisingly ... our general point average got higher this semester. I know many students who passed the courses that they had failed many times before ... assessment was really flexible. (T5)

Preservice teachers also reported that they had some opportunities which stemmed from technology itself, such as recording of the live sessions.

The best thing during that period was the recording of the courses. We could watch them later even if we didn't attend the live sessions. (S3)

Another technology-related opportunity reported by preservice teachers was flexibility of time and place.

We didn't lose any time on the way. (E4); We had more time left and we went on our education from homes. (M6)

Preservice teachers also emphasised that they had some personal opportunities such as increased readiness. They believed that learning online led them to enhance their technology knowledge.

At the beginning, I became aware that I was incompetent in technology knowledge but my motivation and technology knowledge enhanced during that period. (M7)

Preservice teachers also became aware that their problem-solving skills improved during that period.

I think my problem-solving skills improved because I learnt how to deal with hardships in an emergency situation. (E2)

Suggestions for improved learning

The two sub-themes and codes of suggestions for improved learning are shown in Table 4.

Table 4: Sub-themes and codes of suggestions for improved learning

Theme	Sub-themes	Codes
Suggestions for	Unit related	Shorter live sessions
improved		Fewer assignments
learning		Sufficient learning materials should be provided
		Improving technological knowledge
		Improving technological pedagogical knowledge
		More problem-solving in mathematics field
		courses
		More flexible assessment
	Degree program related	Opportunity to practice in Teaching Practicum

Preservice teachers' suggestions were particularly unit related, since their experienced challenges were mostly related to pedagogy. Preservice teachers highlighted that the duration of the live sessions should be reduced.

Live sessions should be 30-40 minutes. Otherwise, I am distracted by other things. (S5)

While preservice teachers supported assignments, they suggested that they should be given fewer assignments.

Each instructor should give assignments but now too many. (M6)

Preservice teachers also expected that learning materials such as *PowerPoint* slides and PDFs should be provided by the instructor.

Some instructors didn't provide learning materials for us ... they should provide materials and also direct us to different learning materials. (E3)

In addition, preservice teachers suggested that the instructors should improve their technological knowledge.

Some instructors weren't using the system well ... they should improve themselves in terms of technology usage. (T1)

It is also suggested that instructors should conduct live sessions in a more efficient way. In a way, they should improve their technological pedagogical knowledge.

Instructors should consider ways about how to teach online better. (S5);

Only 3-5 students participate in the discussions ... instructors should get everybody participating actively. (M7)

A department-specific suggestion was made by preservice teachers studying in Elementary Mathematics Teaching department. They suggested that their field knowledge courses should include more problem-solving.

Some instructors just read the slides so we cannot reach the course aims ... there should be more problem solving. (M1)

Another suggestion was about the assessment approach of instructors.

Some instructors were very strict about assessment ... they said that we had to do our duties ... they should have been more flexible. (T2)

On the other hand, preservice teachers suggested that they should be provided with opportunity to realise teaching practice in Teaching Practicum, which was categorised under degree program related suggestion, since practicum was completely removed through a decision of the Higher Education Council.

For Teaching Practicum, we could also apply distance teaching to students ... we could be matched with students ... at least it could be done on a voluntary basis. (M4)

It was also revealed that preservice teachers made omissions in their suggestions for improved learning. Though they stated they lacked emotional and social support, they did not indicate any suggestion for this. Thus, it may be suggested that instructors use discussion forums or social networking groups to provide emotional and social support for preservice teachers.

Discussion

This phenomenological study investigated preservice teachers' experiences with ERT. Based upon comprehensive analysis of qualitative data, four themes emerged: successful implementation factors, challenges, opportunities and suggestions for improved learning. The results are discussed for each of the theme with relevant literature.

First, the results related to successful implementation factors of ERT, such as students' readiness, taking responsibility of their own learning, instructors' technology and technological pedagogical knowledge and easy use of the learning management system are in line with research conducted by Almaiah et al. (2020), Alvarez (2020), Hebebci et al. (2020), and Tumen Akyildiz (2020). Preservice teachers were aware of the fact that they had to take more responsibility for their own learning in ERT, compared to face-to-face instruction. Similarly, Craig et al.'s (2008) study, which investigated university students' reflections of their roles in online learning, disclosed that students saw it as their responsibility to be self-motivated, submit work which is their own and on time, prepare for classes and ask for help when needed. Thus, it is suggested that students take part in discussions, be prepared to speak out, produce solutions and work under minimal guidance of instructors (Craig et al., 2008). Besides, students must be provided with opportunities to discover on their own with questions and through problem-solving activities to enable deep learning in online learning (Schultz & DeMers, 2020). It is also of

great importance for instructors to encourage students to participate fully in online learning experiences in order to ensure that students are equipped with lifelong learning skills such as being self-directed or independent learners.

Another factor preservice teachers drew attention to was instructors' 'pedagogic agility', namely their flexibility and making quick but meaningful decisions regarding practice (Kidd & Murray, 2020). In this sense, preservice teachers reported that most of the instructors showed pedagogic agility. However, preservice teachers who expressed the most dissatisfaction with ERT were those studying in the Elementary Mathematics Teaching department. They regarded mathematics field knowledge courses as inefficient due to the fact that the instructors started using lecturing methods instead of problemsolving, and they could not solve a variety of problems to improve their problem-solving skills, which indicated instructors could not navigate to pedagogic agility. In this regard, pedagogic agility is considered as an important component for ERT, since instructors are required to act rationally and with purpose in the new learning environment. In order for instructors to keep pace with the demands of ERT, they need to transform from initial 'pedagogic discomfort' to 'pedagogic agility' (Kidd & Murray, 2020) by adjusting instructional methods and materials. Ramsay et al. (2019) suggest the collaboration of related centres, such as centres for teaching and learning, and faculties to support faculty development and promote pedagogic agility. These centres may support instructors' learning design processes or produce asynchronous, web-based resources.

Regarding the challenges, it was disclosed that preservice teachers experienced pedagogical, technological, social and emotional challenges. Many studies were found indicating similar results concerning preservice teachers' experiences of pedagogical challenges, such as overloaded assignments, lack of practice in practice-based courses, lack of variety in teaching method, lack of interaction, and unreliable online exam results, as well as technological and emotional and social challenges (Almaiah et al., 2020; Alvarez, 2020; Er-Turkuresin, 2020; Hadar et al., 2020; He, 2014; Korkmaz & Toraman, 2020; Rahiem, 2020, Tumen Akyildiz, 2020). An important challenge was lack of Teaching Practicum for senior preservice teachers. Teaching practicum is the most highly valued component of preservice teacher education (Smith & Lev-Ari, 2006) and is considered a journey that leads preservice teachers to think in more complex ways about teaching with the aim of preparing them to handle classroom realities better (Grudnoff, 2011). Despite its importance, teaching practicum was completely removed after school shutdowns and preservice teachers lost all contact with the cooperating teacher, as a result of the decision by the Higher Education Council (HEC). Whilst preservice teachers completed some written assignments to compensate for the practicum omission, this course should be enhanced by including online micro-teachings or assessing via video-based case studies (Kidd & Murray, 2020) instead of just written assignments. As also revealed in preservice teachers' suggestions and shown in Flores and Gago (2020) and Sepulveda-Escobar and Morrison (2020), preservice teachers may follow their cooperating teachers' activities, prepare lesson plans and teach students online so that they may at least improve themselves in online teaching, instead of face-to-face instruction.

In addition, preservice teachers declared that instructors covered all course content; however, their emotional and social needs were not met during that period. This finding suggested that instructors showed teaching presence, a component of the community of inquiry model (Thompson et al., 2013), by conducting weekly synchronous live sessions and giving quick feedback to assignments, yet they did not establish social and emotional presence sufficiently. Establishing social presence among students and between students and instructor, and involving emotional expression, open communication and group cohesion are essential for effective online learning (Thompson et al., 2013). As Bozkurt & Sharma (2020) put forward, teachers should focus not only on teaching course content, but also on teaching how to share, collaborate and support. Hence, it is suggested that it is necessary to establish emotional presence in ERT to cater for learners' emotional needs in crisis situations.

Concerning the third theme, findings demonstrated that they experienced some opportunities such as sustainability of education, assignments leading to deep learning, flexibility of time and place, learning needs met, and flexible assessment. These findings are in line with those from the studies conducted by He (2014), Hebebci et al. (2020), la Velle et al. (2020), Rahiem (2020), and Tumen Akyildiz (2020). In parallel with the findings of the current study, Naidu (2017) suggested that flexibility has been a central attraction of online learning, and it should involve not only flexibility of time and place, but also pace and freedom of choice regarding issues and topics to study. Preservice teachers also acknowledged that instructors conducted flexible assessment during ERT. As Nasri et al. (2020) illustrated, instructors had divergent opinions about the most appropriate alternative assessment approaches during the pandemic, which offered opportunities for improved flexibility of assessment.

Furthermore, preservice teachers made some suggestions for future ERT practices. Their suggestions, such as improving technological and technological pedagogical knowledge for instructors and reducing the number of assignments, were in line with the findings of the studies by Bhaumik & Priyadarshini (2020), Nasri et al. (2020) and Tumen Akyildiz (2020). Preservice teachers also expected to be provided with opportunities to practice in courses such as Society Service Practices.

Conclusion and implications

To sum up, the central finding of the study was that preservice teachers experienced pedagogical, technological and social-emotional challenges which far outweighed the opportunities such as sustainability of education and flexible assessment approaches. If necessary precautions are not taken, then these will have a negative impact on their learning outcomes. Besides, this study concluded that the successful implementation of ERT depended on factors such as students' readiness for taking responsibility for their own learning, and instructors' readiness and pedagogic agility.

The results of the study indicate that training preservice teachers and instructors for the next ERT semester is important, should one arise. Preservice teachers might be trained as regards to the roles they are expected to undertake in online learning, and informed about

their responsibilities. They might also be motivated to participate actively in online learning. On the other hand, instructors should be trained in relation to technological pedagogical knowledge and preparing meaningful asynchronous learning materials. As also suggested by Korkmaz & Toraman (2020), it is needed to reshape the competencies of educators by equipping educators with online teaching capabilities. In addition, it is important to note that peer observations of online teaching should be implemented, thus instructors might improve their online teaching competency through constructive feedback.

Furthermore, in current preservice teacher education in Turkey, a 'Teaching Technologies' course is offered (Higher Education Council, 2018), but a single course may not be sufficient to prepare preservice teachers for possible future online teaching. Therefore the content of this course should be enriched with practicum opportunities to train competent teachers who can prepare instructional materials specific to the field and apply these in an appropriate manner. Also, it is of substantial importance that more coursework in the curricula of education faculties should be included for preparing future educators for online teaching, as was discussed by Korkmaz & Toraman (2020).

This study has several implications. The findings of this study might provide useful data to teacher educators to design their curriculum and instruction for the post Covid-19 education. Moreover, Higher Education Council officials might benefit from the findings with respect to their decision-making about Teaching Practicum and School Experience. Senior preservice teachers should at least be given the opportunity to teach online.

Changes in teacher education during the pandemic could actually be seen as an innovation and necessary changes and precautions could be taken for future emergency situations (Ellis et al., 2020). For future research, preservice teachers' perspectives regarding ERT could be further sought using mixed method research designs, including scales, interviews and reflective diaries. Teacher educators' experiences might also be investigated through interviews.

In the present study, important results were reached within some limitations and delimitations. First of all, this study was limited to the data collected through interviews since it was not possible to reach most of the preservice teachers in this emergency situation and collect quantitative data extensively. This study was limited to the data obtained from 24 preservice teachers studying in four different departments. Additional unique data could be obtained if more preservice teachers studying in other departments had been involved in the interviews, but at the time it was not feasible for the researcher to reach students in other departments. This study was limited to the data obtained from second, third and fourth year preservice teachers, as first year students did not have sufficient prior experience of the University's face-to-face teacher education.

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Appendix 1: Implementation of practice-based courses during ERT

Teaching Practicum

Preservice teachers take Teaching Practicum in the last semester of their four year degree program. They make observations, design lessons and implement them in K-12 schools under the supervision of their cooperating teacher. Having completed face-to-face practicum for four weeks at schools in the spring semester of 2020, it was no longer possible for senior preservice teachers to have teaching practicum. Thus, an important decision was made by Turkey's Higher Education Council which let preservice teachers complete practicum by preparing assignments or portfolios for the course instructor. Unfortunately, students lost full contact with their cooperating teacher with this decision, since distance education in K-12 schools was carried out through a national channel called EBA-TV.

Society Service Practices

Preservice teachers generally take the Society Service Practices course in the fifth or sixth semester of their four year degree program, depending on their department. They are asked to detect common problems in society, develop some projects addressing these problems, and participate in social responsibility projects. However, due to the pandemic, preservice teachers completed this course by preparing written assignments for the course instructor, as directed by a decision of Turkey's Higher Education Council.

Appendix 2: Demographic properties of participants

Gender	Female	16	
	Male	8	
Year	2	12	
	3	7	
	4	5	
Department*	Elementary	4	
	Turkish language	5	
	Social sciences	6	
	Elementary mathematics	9	
Total	·	24	

Total

* These departments are within the context of primary and middle school teaching.

Appendix 3: Interview form

The interviews were conducted in Turkish and translated to English for Appendix 3 and for quotations by the researcher.

Dear ...

I would like to talk with you to learn your ideas and lived experiences regarding online teaching we applied this semester due to the Covid-19 pandemic. I would like to record the interview if you let me. Before starting the interview, I would like to state that our interview is confidential and your name will not be included in research reports. You can withdraw from the interview at any time. I guess the interview will take about an hour. Before starting our interview, do you have any questions? Let's begin the interview.

- 1. What do you think about the realisation level of the aims of the online courses?
- 2. What do you think about the content of the online courses?
- 3. What do you think about the methods and techniques used in online courses?
- 4. What do you think about the measurement and evaluation processes of online courses?
- 5. What are the factors affecting the quality of online teacher education?
 - a. student-induced factors
 - b. instructor-related factors

- 6. What are the positive aspects of online teacher education?
- 7. What are the limitations of online teacher education?
- What do you think about the level of meeting your needs in online education?
 a. Academic needs
 - b. Social-emotional needs
- 9. What do you think about the impact of online education on the relationship between theory and practice?

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