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Exploring E-Practicum Experience of Saudi Pre-Service Teachers: A Phenomenography Study

Fatimah Abdullah Al-Abdullatif[1]*, Mariam Ahmad Al-Omair[2]

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ABSTRACT

Purpose: Learning and practicing teaching is a challenging endeavor and conducting it virtually has made it far more challenging for preservice teachers across disciplines. It is anticipated that online education will play a significant role in Saudi Arabia's future educational system. To support pre-service teachers' learning and the success of their teaching careers, the function of online teaching practicum in online teaching is essential. Therefore, it is crucial for the practicum program stakeholders and educators to comprehend this once-in-a-lifetime event in order to preserve the future of online practicum in Saudi higher education. The current study used phenomenography research to elaborate on the variation of such experiences from stakeholders' viewpoints and to uncover the impact of such sudden transformation. **Methodology:** 17 preservice teachers volunteered to take part in this study, representing three universities in Saudi Arabia. Semi-structured interviews were conducted using an interview checklist and the data gleaned from participants' responses. **Findings:** Two primary categories of e-practicum were identified: teacher knowledge and teaching skills. These findings are consistent with previous research regarding the opportunities and challenges associated with e-practicum across various contexts. **Implications:** Several significant ramifications for teachers' educators are highlighted in this study for improving e-practicum programs in Saudi higher education.

[1]Assistance Professor, king Faisal University, Department of education and psychology, Al-Ahsa, Saudi Arabia
Email: falabdullahtif@kfu.edu.sa
[2]Assistance Professor, king Faisal University, Department of Curriculum and instruction, Al-Ahsa, Saudi Arabia
*Correspondence: falabdullahtif@kfu.edu.sa

Introduction

Practicum programs are a fundamental component of teacher education, as they provide both teachers and students with the opportunity to apply educational theories in a real-world teaching and learning environment (Gujjar et al., 2010; Komba & Kira, 2013; Koross, 2016; Mapolisa & Tshabalala, 2014). It provides the opportunity for teachers to apply principles and theories and learn about the requirements of the academic system and school curricula, thus significantly enhancing preservice teachers' professional competence (Gule, 2019). Teaching practicum (TP) programs allow preservice teachers to work alongside and be evaluated by a more experienced colleague while implementing the pedagogy they have learned in courses, thus demonstrating their capacity to undertake solo teaching (Korthagen et al., 2006).

Unfortunately, the global spread of COVID-19 forced governments to take quick, effective preventive measures that disrupted education. In Saudi Arabia, the Ministry of Education for K–12 and higher Education announced a large-scale temporary emergency policy for remote education. During the pandemic, all classes and programs were suspended and switched to virtual learning (Alanazi & Alshaalan, 2020; Alqurshi, 2020). Teacher preparation programs confronted significant challenges because of this transition to fully online learning, and the sudden changes strictly limited students' teaching experiences by restricting their in-classroom practice opportunities (Mikeska et al., 2022). The goal of TP programs in Saudi higher education is to prepare preservice teachers psychologically and pedagogically to fulfil their professional responsibilities after graduation. TP programs provide them with advanced experience in classroom management and the activities required for teachers' work in Saudi public schools.

From a quality perspective, online learning demands extensive preparation and planning, and both students-teachers and faculty must change their perspectives to assume new roles in the educational process (Mishra et al., 2020; Shehata et al., 2020). Due to the unexpected closure of schools and institutions, however, the e-practicum implemented in Saudi Arabia during the pandemic were different from regular, well-planned online programs (Alanazi & Alshaalan, 2020). Thus, adopting a phenomenographic approach, this study aimed to identify the variety of program experiences from stakeholders' perspectives and assess the impact of the sudden transformation on the quality of TPs during the pandemic. The primary purpose of the phenomenographic approach is to reveal how individuals perceive phenomena in their entirety and how these experiences vary (Al Abdulatef, 2020; Marton, 2000, 2004).

During the pandemic, distance education presented challenges as some teachers lacked sufficient experience with technical skills that enable fully managing and implementing distance learning or lacked experience in creating appropriate educational content (Wahab, 2020). Teachers' lack of actual preparation for this sudden transitional phase was a result of that a large percentage of teachers did not have the necessary means to support distance education, such as networks and computers or tablets (Al Lily et al., 2021; Wahab, 2020). According to Alanazi and Alshaalan (2020), 54.1% of faculty members in medical and health colleges reported that they had rarely or never used e-learning/teaching before COVID-19, while 45.9% reported using e-learning regularly or sometimes.

Table 1.

OECD Study to Measure Countries' Preparedness for Online Learning in Response to COVID-19 (Higher Percentage Indicate Better Preparedness).

No.	Indicator	KSA	OECD Countries
1	Integrate the use of information and communication technology (ICT) into preservice teacher preparation programs	73%	56%
2	Integrate ICT skills into teachers' professional development activities	75%	67%
3	Availability of effective professional resources designed to help teachers learn how to use digital devices	76%	60%
4	Teachers' openness to change	76%	18%
5	Professional collaboration between school principals in tasks that pose a greater challenge	66%	65%
6	Time spent on communication and collaboration between teachers and parents	72%	61%
7	Support school principals to collaborate with teachers in developing new teaching practices	85%	74%
8	The possibility of teachers supporting their students' learning through the use of digital technologies	36%	21%
9	Opportunities exist to enhance digital skills by offering higher levels of professional development to teachers.	72%	59%
10	Sufficient time to prepare lessons that integrate digital devices into learning	43%	40%
11	Participation of teachers in activities specifically designed for their professional development	48%	37%
12	Students recognize the importance of learning and working hard at school	91%	88%
13	Participation of teachers in participatory professional learning in their schools at least once a month	2.2%	1.4%

However, most preservice teachers are inexperienced in developing in-person teaching skills, and they find the online teaching environment extremely challenging. Several studies have revealed that e-practicum is either not preferred or is hampered by problems (Ersin et al., 2020; Evagorou & Nisiforou, 2020; Kim, 2020; Nel & Marais, 2020). In addition, it was challenging for mentors and cooperative teachers to adjust to innovative methods of teaching and learning while maintaining the effectiveness and impartiality of the educational process (Robinson & Rusznyak, 2020; Sepulveda-Escobar & Morrison, 2020; Sethusha, 2020). With such variations in experience, it is imperative to understand in depth how programs' stakeholders worked in a virtual context to overcome challenges and what technical resources were used by preservice teachers to maintain success in the core planning, implementation, and evaluation areas of the TP program in Saudi Arabia. Acquiring such knowledge is essential in TPs and can contribute to the quality education element of Sustainable Development Goal 4 (SDG 4) in Saudi higher education. In addition, online

learning is expected to have a large impact on Saudi Arabia's educational system in the future (Aladsani et al., 2022). Hence, the role of e-practicum in online education is crucial to aiding preservice teachers' learning and the success of their teaching careers (Al Lily et al., 2021; Aladsani et al., 2022). An international study by the Organization for Economic Co-operation and Development (OECD) assessed education system preparedness for the pandemic in its 36 member countries (2021). The study reveals preparedness for integrating information and communication technology (ICT) by 73% of preservice teachers in the Kingdom of Saudi Arabia (KSA). Figure 1 and Table 1 present the results of the study, offering a comparative analysis between the KSA and the organization's 35 other countries (Mann et al., 2020).

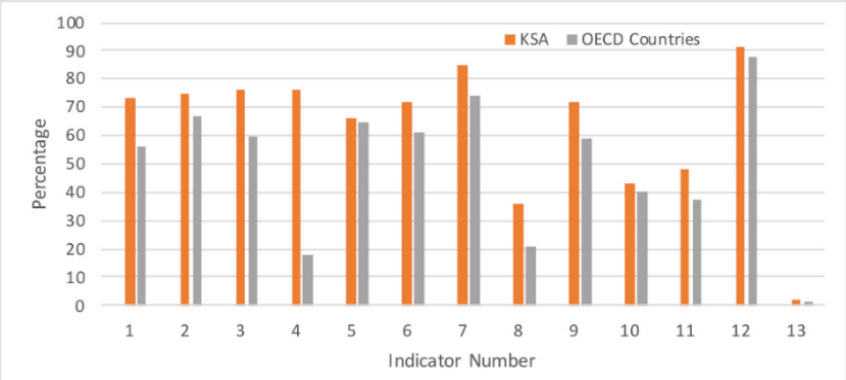

Figure 1. Indicators of OECD countries' preparedness for distance learning in response to the COVID-19 pandemic.

Literature Review

Research on E-Practicum during COVID-19.

The literature highlights numerous shortcomings of online learning, including inadequate infrastructure for online education, teachers' inexperience, knowledge gaps, and the complexity of the home environment, among other issues (Murgatrotd, 2020). Nevertheless, many studies have also shown the wide acceptance and perceived usefulness of online learning during the pandemic among faculty members and students in Saudi higher education institutions (Alavudeen et al., 2021; Alkabaa, 2022; Alsmadi et al., 2021; Khan et al., 2021; Khasawneh, 2021). For the sake of brevity, only a few studies of e-practicum have been described in detail to establish the foundation for the current study.

While virtual teaching practice cannot replace education students' exposure to hands-on classroom experience, the unique educational settings of COVID-19 encouraged improvement in teaching practice education, especially in digital competency (Özkanal et al., 2020). Several studies have demonstrated the attitude of preservice teachers toward e-practicum as positive and favourable (Kidd & Murray, 2020; Osman, 2020; Sasaki et al., 2020; Sepulveda-Escobar & Morrison, 2020).

In an interpretive case study, Sepulveda-Escobar and Morrison (2020) examined the benefits and drawbacks of virtual teaching practice experience in 27 teacher candidates of English as a

foreign language (EFL) in Chile. The findings show that the elements most significantly affecting the participants' personal learning processes included the lack of face-to-face contact with other students and the abrupt shift in the environment. Nevertheless, the preservice teachers stated that this unusual opportunity would contribute positively to their preparation as teachers and to their future careers. Similar results were found in an action research study by Nel and Marais (2020), in which 12 preservice teachers from South Africa participated in a two-week TP conducted over WhatsApp. The university professor and cooperative teachers from the school also supervised and monitored the preservice teachers through WhatsApp. The findings show that the participants believed that the TP experience using WhatsApp had developed their skills at explaining subject-specific content regarding feedback and assessment centred on the core of TP. To enhance the effectiveness of the e-practicum, a descriptive study conducted in the USA by Kim (2020) illustrates how a TP course in early childhood education was revised to give preservice teachers the opportunity to learn and teach online. The study involved the description of three stages (preparation, implementation, and reflection), and the findings illustrate preservice teachers' online teaching experiences of interacting with children and thinking critically about how to use digital tools effectively to support their students' learning and development.

To identify the study gap, a thorough literature review was conducted and identified three particular components pertaining to our current research endeavour.

First, with the emergence of COVID-19, TP program stakeholders abruptly found themselves obligated to use technological tools and learning platforms to undertake the program remotely (Colás-Bravo et al., 2021), as that was the only available method for teaching and learning assessment at the time. These experiences have generated an abundance of digital resources, data, and skills that are vital to the long-term viability of educational systems (Colás-Bravo et al., 2021). By describing such experiences, this study's findings will enhance faculty members' conceptualization of the e-practicum and enable them to rethink several technical aspects of the future program to ensure an outstanding quality of online practicum education.

Second, the aforementioned studies indicate that the experiences of preservice teachers in education colleges within the Saudi Arabian context have received moderate attention. These students, whom the faculties of education are responsible for training both scientifically and professionally, will constitute the final teaching outcomes. Through their work in school after completing their TPs, these teachers will contribute in turn by supporting the education community. Thus, the present study aimed to advance the understanding of their e-practicum experience by investigating the program stakeholders in education colleges.

Third, although various research methodologies have been used in the literature, there has been a dearth of qualitative research. Phenomenography is a well-established qualitative research methodology for revealing a group's perceptions of a specific phenomenon (Cresswell & Poth, 2018). It is a widely accepted approach for studying education across a range of subject areas, including language assessment (Murillo & Hidalgo, 2020; Rezai et al., 2021) , smart learning (Lister, 2021, 2022), technology (Al Abdulatef, 2020; Hsieh & Tsai, 2017; Majumdar et al., 2021; Reeves et al., 2017), early childhood education (Samuelsson & Sheridan, 2009), and science, mathematics, and engineering (Case & Light, 2011; Gordon & Nicholas, 2015; Watts et al., 2022).

Considering the aforementioned, the central notion guiding this study is in what way preservice teachers' TP experiences were altered by the COVID-19 eruption? Moreover, how this unfortunate event will benefit future e-practicum programs in Saudi Arabia's higher education?

Methodology

Research Design

The ambition for this study is to contribute to designing superior, viable e-practicum programs by drawing upon knowledge of the challenges and barriers as well as the opportunities and benefits that occurred during the pandemic. Phenomenographic approach is especially informative and useful for the current study, as it clarifies why preservice teachers have different levels of learning experience even though they all engaged in the same course activity and assessment procedures. Examining phenomenographic data reveals the participants' preliminary understanding and establishes a foundation for drawing upon the variation theory of learning in enhancing pedagogical design and educational instruction geared at e-practicum programs (Han & Ellis, 2019).

This section outlines the three essential steps in conducting a phenomenographic study: sampling and data collection, data analysis and trustworthiness procedures, and discussion of the phenomenographic findings.

Participants

Two criteria were considered in recruiting participants: whether the potential subjects had encountered the phenomenon being studied and whether the sample size was sufficient to reveal variations. The chain sampling technique was employed to identify "information-rich key informants" Patton (2002), and maximum variation sampling was used to map mutual patterns of variations and potential uniqueness (Patton, 2002). Therefore, two steps were followed in selecting the study sample in the interest of obtaining more diverse materials. The first step was to select higher education institutions that offered practical teacher education in three regions of Saudi Arabia (eastern, middle, and western). The researchers next approached the institutions with which they had personal relationships, explained the goal of the study, and enlisted their help in locating additional colleges that implemented e-practicum during the pandemic. Upon obtaining this information, departments were contacted for support in finding suitable interviewees. After the study was granted ethical approval (#kfu-rec-2022-Aug-Ethics114), all faculty members (mentors), cooperative teachers, and preservice teachers who had participated in an e-practicum were contacted. Table 2 summarizes the participants' demographic information.

Table 2

Participants' Demographic Information

Participants	Number	Major
Student-teacher	17	Early childhood (9) Educational technology (3) Educational arts (5)
Mentors	3	-
Cooperative teachers	2	-
Total sample	22	

Data Collection Methods

Semi-structured interviews and open-ended questionnaires are used in phenomenographic

research practice, as they reveal both the breadth and depth of variation in data (Åkerlind, 2012). Unlike qualitative interviews, which focus on the individual or the phenomenon, phenomenographic interviews highlight the relationship between the two (Yates et al., 2012). Therefore, the interview questions were carefully designed to encourage individuals to reflect on their experiences; the interviews were conducted with a predetermined list of questions, and the data were gleaned from the participants' responses (Yates et al., 2012).

To develop an interview checklist, the researchers thoroughly examined the literature for existing theories, frameworks, and instruments for measuring the e-practicum e.g., (Ersin et al., 2020; Kidd & Murray, 2020; Kim, 2020; Nel & Marais, 2020; Osman, 2020; Özkanal et al., 2020; Sasaki et al., 2020; Sepulveda-Escobar & Morrison, 2020; Gule, 2019). The general concepts of the TP were defined on the basis of the extant literature. Subsequently, to formulate the questions, the concepts were dissected and divided into smaller sections. Next, a university professor specializing in the TP evaluated the content and language of the checklist to ensure the questions' validity. Based on her comments, the checklist was revised to eliminate problematic and unclear items. In general, the checklist embraced the core areas of the TP program, i.e., planning, implementation, and evaluation. It includes items such as knowledge of teaching and assessment methods, in-person teaching skills, students' individual differences, pedagogical content knowledge, speaking skills, effective lesson planning and preparation, good teacher behaviour, class environment, teacher-student relationship, appropriate classroom management skills, extracurricular activities, communication skills with students' parents, students' motivation in sessions, digital literacy, moral and ethical requirements, test administration, and reporting.

After its design and validation, the checklist enabled the researchers to systematically conduct semi-structured interviews (Patton, 2002). These interviews began with a broad question: "How was your online teaching practice?" The researchers then proceeded with the checklist's sub-questions and posed additional relevant questions as necessary to elaborate on the responses. The interviews were conducted in Arabic to allow participants to express themselves freely. Each interview lasted about 25–40 minutes and was audio-recorded, and then transcribed and analysed.

Data Analysis

The analysis commenced after all transcripts were ready. The researchers-maintained consistency throughout the research procedure, examining the data through a phenomenographic approach comprising four distinct steps as described by (Marton et al., 1992). In the first step, two researchers meticulously reviewed the transcripts, seeking similarities in the participants' conceptualizations of e-practicum. The first researcher then implemented a data pooling strategy in the next step by categorizing brief segments of transcripts that the second researcher had identified as reflecting specific conceptualizations (Marton, 2004). In the subsequent step, the researchers met to review the same transcript segments and discuss each other's analyses to reach consensus on the category classifications and to write a first draft of the preliminary categories. In the final step, the researchers took great care to maintain the original meanings and chose the segments that best reflected the categories. The iterative analysis continued, and the number of categories was reduced to two by focusing more on the significant variants within the experiences reported by the interviewees. Generally, the conceptualizations that the researchers identified centred on teacher knowledge and teaching skills. A logical structure emerged late in the analytic process, when the researchers studied the connections between the two categories that comprised

the outcome space (Marton, 2000; Tight, 2016).

Since the study's goal was to develop a structure for categorizing preservice teachers' e-practicum experiences, interviews with mentors and cooperative teachers were conducted primarily to generate data for comparative purposes and were thus excluded from the phenomenographic analysis.

Trustworthiness of the Study

Because of the iterative aspect and collaborative nature of this work, this study's researchers took pains to ensure its validity and reliability as suggested by (Åkerlind, 2012). Notably, several steps were taken to improve the accuracy of the research process and the results. The fact that two researchers simultaneously coded the data contributed to the results' reliability. They engaged in communication regarding the coding process and addressed any discrepancies that arose. The inter-reliability for coding was calculated to be 0.82, which was deemed satisfactory for achieving the study's objectives.

The member-checking approach and respondent validation were used to ensure the accuracy and reliability of the findings. Member checking is a typical method in qualitative research for ensuring the trustworthiness of findings as (Patton, 2002) noted. In this regard, the authors examined all extracted concepts and thoughts. Afterward, four participants individually reviewed, commented on, and confirmed the meaning of the category descriptions. In this respondent validation, they confirmed their intent, corrected discrepancies, and provided further details. They were asked to review the modifications after changes had been made based on their initial feedback. The participants attested that the extracted concepts and constructs accurately reflected their original thoughts.

Study Findings and Discussion

The data analysis identified two major categories in the perception of e-practicum that relate to the three core areas of TP: planning, implementation, and evaluation. The first category, teachers' knowledge, embraces such elements as digital literacy and online course implementation, while the second, teaching skills, includes things such as online testing and assessment, classroom activities, and communication with students. Table 3 describes each category. The outcome space included the fewest number of categories needed to clarify the whole variation in the data (Figure 2).

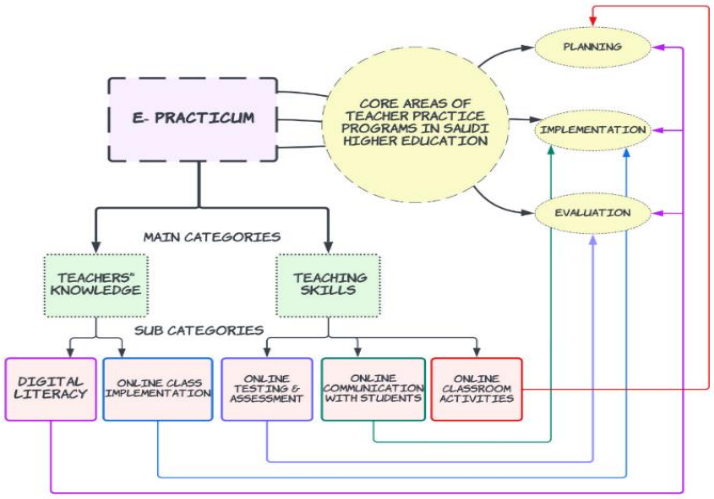

Figure 2. The outcome space outlined by the two categories of online teaching practice in relation to TP program's core areas.

Table 3

Categories with their Interpretations

Category		Interpretation
Teachers' Knowledge	Digital literacy	The knowledge and competency to incorporate educational materials and online course components to ensure success as well as the ability to navigate and use online teaching platforms.
	Online course implementation	
Teaching Skills	Online testing and assessment	The knowledge and competency to create online tests and methods of assessment.
	Online Classroom activities	Awareness of how to use educational materials and technology tools to make the classroom interactive for better student engagement.
	Online Communication with students	Speaking and discussing students' performance, work, and behaviour in effective dialogue with students.

Teacher's Knowledge

Digital Literacy

The first topic that piqued the participants' interest was digital knowledge. Regarding the importance of understanding technology, one subject observed, "I currently think that everything is technology focused. I will surely use technology if the school's resources allow it, given how useful the course has been." Other interviewees echoed that sentiment, with one saying, "I now understand how vital using technology is and how critical it will be to my work in the future."

These remarks demonstrate that digital literacy is perceived as an essential component of a TP.

Consistent with the findings of Ersin et al. (2020), the results of this study demonstrate the importance of preservice teachers possessing the requisite technical skills to effectively utilize digital materials for teaching and to assess students' performance using innovative technology. The study's findings suggest that the growing interest in employing new digital technologies in TP programs is related to the effectiveness and convenience they offer educators (Kidd & Murray, 2020). However, due to ongoing improvements in technology and the primacy of computer-assisted materials in teaching and learning, the TP program must be updated in this area (Mikeska et al., 2022). Additionally, the findings corroborate Evagorou and Nisiforou (2020) argument that preservice teachers should have the necessary degree of technical literacy to be effective teachers in the digital age.

Online Class Implementation

Having an adequate understanding of how to combine educational materials with virtual teaching was the second theme under teachers' knowledge. Distance education involves more than simply turning on a camera and microphone and reading from a PowerPoint presentation. According to Mishra et al. (2020), pedagogical practice is a must for teachers to understand how certain topics, problems, and difficulties can be organized, transformed, and presented to learners in light of their individual differences. One of the interviewees emphasized the significance of this element as follows:

"It was hard, overwhelming. Some think that online teaching is similar to traditional teaching and that the only significant difference between the two is that of the physical space." Said another, "It is not sufficient for the teacher to simply appear in front of the student and make a presentation on his computer instead of writing on the board."

Understanding the lesson design process and creating a concise outline based on the principles and concepts of online education are necessary for a successful remote lesson (Mikeska et al., 2022). In line with Sepulveda-Escobar and Morrison (2020), it may be argued that, in the virtual environment, preservice teachers will fail to communicate and present the learning materials appropriately if they lack the requisite comprehension of pedagogical content, thus hampering students' opportunities to study and demonstrate their abilities. Similarly, Nel and Marais (2020) found that preservice teachers in e-practicum had little opportunity to prepare or perform lessons and could not adapt to the children's learning level, which indicates that most TP programs are not structured and geared to thoroughly assist preservice teachers in learning how to employ effective teaching skills, such as explaining content (Nel & Marais, 2020).

Teaching Skills

Online Testing and Assessment

Another element that the subjects commonly mentioned was online testing and assessment. One preservice teacher said, "As opposed to in-person in school, kids don't take tests as seriously. Since it is online, they cheat a lot, and it's challenging to handle. I can't know; it does not reflect the actual ability." Furthermore, one of the participants emphasized concerns about the legitimacy of online performance assessment.

Finding out if they truly got the lesson was the major challenge, because, if they don't, they

struggle in later stages. However, if it were in a classroom, I could give them a worksheet to complete and assess their comprehension more accurately … but, since it was online, parents could readily answer or help explain the questions.

These statements provide evidence of the importance of a clear rubric for online testing. The findings also suggest that, if evaluation techniques are not deemed ethically sound, decisions made on the basis of test results may not be accurate (Rezai et al., 2021). Subsequently, these poor judgments could negatively affect students' future education. This result confirms earlier research by Al Lily et al. (2021) that demonstrated that ethics in assessment techniques was a concern during the pandemic and significantly affected student learning.

Online Communication with Students

Another topic that emerged from the participants was the absence of connection with students, which had a negative impact on their teaching experience, causing anxiety and lowering their motivation. A respondent commented, "Being away from the student and not having direct contact with them cause's anxiety and fear that I will not be able to deal with them in the future, after the pandemic ends." Given that preservice teachers could not know what their students' learning styles were, it was difficult to discover what students knew and provide challenging tasks, chances for conversation, and constructive comment. This lack of good connections with students made it difficult to plan suitable class materials. Another subject endorsed this impression, stating, "I have a hard time getting them to respond to me because they are so young and lack the maturity to do so, either when I ask a question or when I ask them to complete a chore." This result corroborates the findings of Sepulveda-Escobar and Morrison (2020), who found that the lack of regular engagement with students (as in face-to-face sessions) led the participants to report that it was difficult for them to plan and adjust educational materials, as they could not get to know their students as was possible before the schools were closed due to the pandemic. Consequently, it proved difficult to engage with and regulate students. Nel and Marais (2020) have previously reported similar findings, stating that students prefer face-to-face instruction and do not completely understand the notion of online education.

Another pertinent issue under this theme was requesting assistance from parents and cooperative teachers. One student-teacher stated, "We found that we couldn't do some tasks. We'd text her [the cooperative teacher with such messages as] 'I can't finish this section.' We'd ask later, 'How would we explain this task online?' She demonstrated how to accomplish it for us via screen sharing and voice text." According to Nel and Marais (2020), e-practicum enable cooperative teachers and mentors to provide instant feedback and constructive support to preservice teachers, allowing them to change and enhance their training and lessons as needed (Li et al., 2022). Furthermore, the participants revealed the critical role that parents played in providing them with a deeper understanding of their children's learning. "Mothers somehow helped … allowed me to understand how her child learned. … I could send them a worksheet to complete after class and then … pics to assess his comprehension. … When parents lack the knowledge to use technology, it becomes difficult to communicate." According to the research of Bubb and Jones (2020), one explanation for the present study's findings may be that parents will be in a much better position to contribute to their children's' learning if they have even better relationships with instructors.

Online Classroom Activities

The final theme under the teacher's skills domain is classroom activities. As the title implies, the participants emphasized that they should involve students in educational activities. One subject made the following observation to support this: "To carry out the responsibilities placed upon you as a teacher and to take an active part in the class, I must be able to carefully and clearly link the knowledge and experience to us to be a good teacher." In line with that statement, one participant stressed the importance of keeping students engaged in the classroom given that they are easily distracted.

"Students may be busy with mobile phones, opening applications, or thinking or eating, sleeping—I can't control their behaviour; I don't know how. ... It requires effort for the teacher and students, especially when you are teaching students." Said another: "It irritated me when I encountered it, and young students don't seem to have long attention spans. … Children get bored during the lesson."

Clearly, the preservice teachers felt the responsibility to involve their learners in class activities to make their teaching sessions effective. In line with Özkanal et al. (2020), one potential clarification for the study's findings is that, when preservice teachers create an active environment, their self-regulation competency improves, which puts them in a better position to achieve their goals. Furthermore, complementing those of Sepulveda-Escobar and Morrison (2020), this study's findings may be explained by the belief that involving learners in class activities can improve preservice teachers' confidence and motivation by showing them that they possess the necessary skills for teaching. This study's findings back earlier research demonstrating the obligation of preservice teachers to produce innovative approaches and engagement strategies to meet the demands of delivering virtual classes (Özkanal et al., 2020).

Conclusions and Implications for Further Research

Learning and practicing teaching is a challenging endeavour, and the COVID-19 pandemic made it far more challenging for preservice teachers across disciplines. This report offers phenomenographic research that characterizes students' diverse experiences by analysing and interpreting interview data from 17 preservice teachers. An outcome space expressed the experiences in two main categories: teaching knowledge and teachers' skills. The function and quality of e-practicum in online education is essential to support preservice teachers' learning and the success of their teaching careers as related to SDG 4. It is anticipated that online education will play a significant role in Saudi Arabia's future educational system, so it is crucial that practicum program stakeholders and educators comprehend this once-in-a-lifetime event to preserve the quality and sustainable future of the online practicum in Saudi higher education. This study benefits the TP program's stakeholders and teacher educators by giving them the opportunity to consider the experiences of preservice teachers and devise strategies to modify TP programs for superior outcomes across a variety of program features.

To improve future e-practicum programs, emphasis should be placed on teachers' knowledge and teaching skills—the participants' central concerns—which relate to the three core areas of teachers' practice (i.e., planning, implementation, and evaluation); this emphasis must address the virtual context, which places a greater burden on inexperienced teachers. In planning online class materials, the preservice teachers had little opportunity to prepare or implement online lessons

and could not adapt to the children's learning level, which resulted in an inadequately structured TP program. Consequently, preservice teachers may need assistance in learning how to plan effective online lessons through project-based learning strategies in which they plan online lessons as part of their practicum course assignments.

Additionally, preservice teachers lacked the necessary digital literacy to successfully implement online lessons and use online educational tools, and this sowed frustration and self-doubt. Requiring preservice teachers to produce innovative approaches and engagement strategies to meet the demand to deliver effective virtual classes may involve learners in class activities and thus improve preservice teachers' confidence and motivation. Furthermore, the lack of communication with students meant that parents needed to be in a much better position to contribute to their children's learning, which consequently requires communication skills to cultivate connections with parents through online means such as emails, WhatsApp messages, and so forth.

Moreover, preservice teachers faced challenges with online testing and expressed concerns about ethical issues and the reliability of assessments. They worried that online testing and assessment could lead to poor judgments, potentially negatively impacting students' future education. Therefore, greater emphasis should be placed on the ethics of online assessment and evaluation techniques, as these significantly affect student learning.

This study emphasizes the primacy of the student experience in any educational pursuit, which should remain a fundamental focus of higher education research. The deeper our comprehension of the variability of preservice teachers' experiences, the greater will be our ability to provide them with a quality experience and achieve the desired sustainable objectives. With the Saudi Education Ministry's decision to conduct distance learning in the event of environmental occurrences and with 73% of preservice teacher's preparedness for integrating ICT, TP programs can assist their students in becoming accustomed to a more sustainable approach in teaching practicum using online modes or hybrid techniques. Currently, there is a need to rethink how to use online resources that might supplement and enhance TP outcomes. In our opinion, to accomplish such quality educational growth of preservice teachers, this has specific demands that must be met, which fall primarily on universities in general and colleges of education in particular. The greatest demand is that applied research by faculty members be directed toward the improvement of e-practicum programs and that action research tackles the challenges and concerns of preservice teachers to benefit the TP community. Nevertheless, additional research is necessary to understand how to improve the quality and sustainability of future e-practicum programs in Saudi higher education.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contributions

Conceptualization, F.A.A.; Writing—original draft, F.A.A; Supervision, F.A.A, M.A.A ; Project administration, F.A.A, M.A.A; Funding acquisition, M.A.A; Data curation, F.A.A; Formal analysis, M.A.A. ;Writing—review & editing, F.A.A, M.A.A.; All authors have read and agreed to the

published version of the manuscript.

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Data Availability Statement

Data will not be available due to confidentiality issues.

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