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Résumé de l'article

In online microteaching, pre-service teachers (PSTs) deliver lessons through online platforms, thus acquiring valuable experience in effective use of technological tools. In refining these experiences, it is crucial for the PSTs to undergo self-, peer, and tutor assessments. This study examined the concordance among self-, peer, and tutor assessments in online microteaching practices, along with students' views on their online microteaching experiences. A case study model was adopted, involving doctoral students enrolled in the Planning and Evaluation in Instruction course. The findings indicated alignment between students' self-assessment and peer assessment, albeit with lower scores compared to those provided by the course tutor. Overall, students expressed positive views regarding online microteaching. They highlighted the benefits of critical thinking, self-reflection, and peer feedback in refining their teaching strategies. However, challenges such as time management, communication, and planning were noted by the students.

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Abstract

In online microteaching, pre-service teachers (PSTs) deliver lessons through online platforms, thus acquiring valuable experience in effective use of technological tools. In refining these experiences, it is crucial for the PSTs to undergo self-, peer, and tutor assessments. This study examined the concordance among self-, peer, and tutor assessments in online microteaching practices, along with students' views on their online microteaching experiences. A case study model was adopted, involving doctoral students enrolled in the *Planning and Evaluation in Instruction* course. The findings indicated alignment between students' self-assessment and peer assessment, albeit with lower scores compared to those provided by the course tutor. Overall, students expressed positive views regarding online microteaching. They highlighted the benefits of critical thinking, self-reflection, and peer feedback in refining their teaching strategies. However, challenges such as time management, communication, and planning were noted by the students.

Keywords: online microteaching, pre-service teachers, self-assessment, peer assessment, tutor assessment

Introduction

Technological advancements have been driving significant changes in educational processes, with traditional teaching methods evolving and being enhanced by various digital tools and platforms. With the advancement of technology, the concept of new generation education has undergone a transformation, becoming more diverse and dynamic. In this evolutionary process, online education methods in particular have emerged as a significant factor influencing the learning experiences of students. Therefore, it is crucial for institutions responsible for training future teachers to adopt and implement updated, contemporary educational methods (Otsupius, 2014). To enhance their pedagogical skills, effective strategies need to be used for pre-service teachers (PSTs). Herein, microteaching arises as one of the most crucial teaching techniques, adaptable to various stages of professional development. Microteaching is a methodology designed to enhance practical teaching experiences of PSTs (Meutia et al., 2018). Microteaching technique allows PSTs to simulate real classroom scenarios on a small scale, facilitating practical development of teaching skills such as lesson planning, presentation, classroom management, and student interaction (Kilic, 2010; Saban & Çoklar, 2013). Mahmud and Rawshon (2013) argued that microteaching can play an important role in teaching environments and provide opportunities to practice teaching activities under controlled and simulated conditions, while taking into account the complexity of real teaching situations.

In contexts that integrate online teaching techniques, microteaching helps PSTs refine their ability to use technology and effectively integrate digital tools. Online microteaching has emerged as essential for equipping PSTs with skills needed to conduct successful online lessons. This study aimed to analyze doctoral students' experiences and assessments of online microteaching practices, particularly within the scope of their pedagogical training in subject-specific teaching methods.

Microteaching

Microteaching is a comprehensive pedagogical approach that holds a significant position in the realms of teacher education, and professional development (Reddy, 2019). Microteaching is an effective teaching technique that has been used in PST education and other teaching and learning environments since the 1960s (Allen, 1967; Kilic, 2010; Otsupius, 2014). Microteaching enables PSTs to translate their theoretical knowledge into practice, refine their teaching abilities, and reveal various teaching styles by breaking down the teaching process into manageable segments (Allen, 1967; Altan, 2023; Karakaş et al., 2022). Microteaching aids PSTs in developing their skills and building self-confidence by conducting brief lessons for small groups within a controlled setting that simulates real classroom settings. It enables PSTs to closely observe and critically evaluate their own teaching methods by putting these under scrutiny (Kilic, 2010; Otsupius, 2014). Additionally, through microteaching practice, students have opportunities to observe a variety of teaching methods and strategies (Kokkinos, 2022). Consequently, these help PSTs focus more effectively on the processes of identifying and enhancing their strengths and addressing their weaknesses (Karataş & Cengiz, 2016).

Microteaching is a cyclical process of planning, teaching, feedback, replanning, and re-teaching (Reddy, 2019). Planning is a crucial element for effective teaching (Imaniah & Al Manar, 2022). During the planning phase of microteaching, PSTs develop a lesson plan by identifying the subject matter and selecting appropriate teaching strategies. Based on their lesson plan, PSTs conduct a brief teaching session, typically lasting 5 to 10 minutes (Allen, 1967). In this condensed course format, PSTs are observed by their peers and trainers, who then provide feedback on their teaching methods and performance. During microteaching sessions, PSTs' teaching performances are recorded on video,

allowing them the opportunity to review and analyze their own performances afterwards (Allen, 1967; Altan, 2023).

The feedback stage, a crucial component of microteaching, encompasses self-assessment, peer assessment, and tutor assessment, each providing valuable insights into the teaching process. Self-assessment typically involves the PSTs reviewing video recording of their lesson and evaluating themselves based on predefined criteria. Peer assessment, on the other hand, entails PSTs assessing each other's teaching performances (Kokkinos, 2022). Since it can be difficult to evaluate one's own abilities, peer feedback becomes crucial in identifying areas for improvement (Otsupius, 2014). These assessments should include constructive criticism and encourage reflective actions to effectively evaluate PSTs' performance (Kusmawan, 2017; Otsupius, 2014; Remesh, 2013). Assessments are instrumental for PSTs to (a) identify both the strengths and areas for improvement in their teaching skills, (b) foster awareness about their pedagogical approaches (Karataş & Cengiz, 2016; Otsupius, 2014; Sarimanah et al., 2021), and (c) plan their teaching strategies more effectively (Imaniah & Al Manar, 2022; Kusmawan, 2017). Moreover, microteaching provides PSTs with the opportunity to collaborate with each other through peer feedback (Sun, 2014). Research on microteaching has indicated that engaging in microteaching practice significantly enhances PSTs' professional development and teaching skills (Arslan, 2021; Evangelou, 2022; Meutia et al., 2018; Reddy, 2019). Therefore, it can be stated that microteaching holds a significant place in PST education.

Online Microteaching

While online microteaching preserves the fundamental characteristics of traditional microteaching practices, it further incorporates the advantages offered by digital technologies. Although microteaching has been implemented in traditional face-to-face educational settings, the recent COVID-19 pandemic led to a more frequent implementation of microteaching in online environments. In online microteaching, PSTs deliver their lessons via online platforms, thereby gaining valuable experience in using technological tools effectively (Altan, 2023).

While online microteaching differs from traditional microteaching, these distinctions have primarily manifested in aspects such as teaching environment, nature of teacher-student interactions, and use of technological tools (Kusmawan, 2017). Whereas traditional microteaching is conducted in a setting where PSTs share the same environment, online microteaching involves conducting lessons remotely, typically using video conferencing tools. For online microteaching to be conducted effectively, it is essential that both PSTs and students have access to necessary technologies and possess skills to use them proficiently (Kusmawan, 2017).

Examination of studies on online microteaching practices have revealed that this technique is crucial for PSTs' professional development (Karakaş et al., 2022; Pham, 2022; Subekti et al, 2023). Online microteaching has been used to enhance the quality of teaching by practicing teachers (Kusmawan, 2017). Research has also demonstrated the effectiveness and feasibility of online microteaching in developing fundamental teaching skills during periods when face-to-face education is impossible, such as the COVID-19 pandemic (Altan, 2023; Kokkinos, 2022; Sarimanah et al., 2021).

Theoretical Framework

Fundamental theory framing this study was based on experiential learning theory (ELT). The concept of experiential learning can be traced back to the ideas of John Dewey in 1938 (Dewey, 1986). This study

incorporated ELT as developed by Kolb (1984) who emphasized that experience and reflection play a central role in learning process. ELT describes learning as a process in which knowledge is created through the transformation of experience. Bower (2013) stated that experiential learning effectively closes the gap between theoretical knowledge and practical application, while also enhancing students' ability to communicate with each other. Kolb (1984) considered that this process was cyclical and comprised four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Based on Kolb's theory, Murrell and Claxton (1987) stated that learning had two dimensions: prehending and transforming. The prehending dimension is a span from concrete experience to abstract conceptualization, while transforming extends from reflective observation to active experimentation.

Microteaching is a cyclical process aimed at professional development of teacher candidates (Reddy, 2019). Kolb's (1984) cyclical process is in harmony with microteaching. PSTs gain concrete experience by planning and presenting lessons, and then they evaluate themselves through reflective observations. They develop theoretical models based on the information obtained from these evaluations and test these models in practice by applying them in subsequent courses. This cyclical process supports PSTs in both transforming their theoretical knowledge into practice and achieving continuous development. The stages of ELT strongly align with microteaching, facilitating PSTs in gaining and evaluating concrete experiences, developing theoretical models, and applying them in practice (Msimanga, 2021).

Research Questions

Studies on online microteaching, have not included comprehensive research considering self, peer, and instructor evaluations simultaneously, while also incorporating students' perspectives regarding online microteaching. Consequently, the primary aim of this research was to enable doctoral students engaged in pedagogical formation courses to (a) implement microteaching within an online setting; (b) conduct self-assessments, peer assessments, and tutor assessments thereafter; and (c) analyze the coherence and alignment of these assessments with each other. Based on the outcomes of these practices, this study also aimed to uncover students' perspectives and experiences. This study was framed by the following key research questions.

1. Is there a difference between self-, peer and tutor assessments in online microteaching practices?

2. What are students' views on the experience of online microteaching practice?

Method

Research Model

This study adopted the case study approach, a qualitative research method. The case study method is a significant model for analyzing complex situations within their respective contexts (Khan, 2019).

Context of Research

This study was conducted within the *Planning and Evaluation in Instruction (PEI)* course at the postgraduate level, delivered over 16 weeks through distance education using Adobe Connect. As part of this course, students were required to present a topic using the online microteaching technique and

develop a lesson plan for the course they would be teaching. The students were instructed to record their online microteaching sessions for a maximum of 25 to 30 minutes and upload them to the learning management system. Each student developed their lessons within a self-determined timeframe in the system and presented them to their peers using distance education. In these sessions, the lecturing student assumed the role of a teacher (PST), while the listeners (peers) took on the role of students. (Throughout this article, the participants of this study are referred to as students.) Both the PST and the peers were asked to keep their cameras and microphones on during the online microteaching practices. After viewing their peer's lecture, each student completed the peer-assessment form and sent it to the evaluated peer and their tutor. Additionally, each student completed the self-assessment form after reviewing their own lecture and sent this to their tutor. The tutor watched all recorded lessons and completed the rubrics for each student, which were also used by the students for self- and peer assessments. Finally, interviews were conducted to collect student feedback on the online microteaching experience.

Participants

Participants were doctoral students enrolled in the *PEI* course during the spring semester of 2022–2023 academic year (Table 1). A total of eight students took this course, and the study was conducted with this small group. Imaniah and Al Manar (2022) and Remesh (2013) have emphasized the importance of implementing microteaching in small groups.

Table 1

Demographic Characteristics of Participants

Participant ID	Gender	Age	Engineering program
S1	Male	28	Forestry
S2	Female	32	Fisheries
S3	Male	27	Mechatronic
S4	Female	26	Horticultural
S5	Male	31	Electrical electronics
S6	Male	50	Mechatronic
S7	Female	34	Fisheries
S8	Male	42	Mechatronic

Data Collection Tools

The rubric for self-, peer, and tutor assessment used in this study was developed by the researcher through a review of the literature. The rubric was divided into three main sections: introduction to the course, implementation of the course, and completion of the course. In the rubric, both students and the tutor assigned scores ranging from one to five, covering 12 items corresponding to the main objectives and features of the *PEI* course.

After a thorough review of the literature, a semi-structured interview form was developed by the researcher to capture students' perspectives on online microteaching practice. To ensure content validity, the rubric and the semi-structured interview form were reviewed by two field experts and revised accordingly. Once the online microteaching sessions were concluded, the rubrics completed by students were collected via e-mail. The semi-structured interviews were applied online. Ethical approval for the research was secured from the university's Scientific Research and Publication Ethics Committee, in addition to obtaining requisite sanction from the Graduate School of Education.

Data Analysis

Analyses using the Shapiro-Wilk Test were conducted to determine if the data derived from the rubrics in online microteaching practice conformed to the assumption of normality. The analytical results indicated that the data for self-assessment did not follow a normal distribution (Shapiro-Wilk results for self-assessment = 0.803, $df = 8$, $p = .031$), while the data for peer and tutor assessments were found to be normally distributed (Shapiro-Wilk results for peer-assessment measurement = 0.870, $df = 8$, $p = .151$; results for tutor-assessment measurement = 0.969, $df = 8$, $p = .892$).

Due to these findings, non-parametric tests were employed for data analysis. The Friedman Test was used to examine the research question concerning the comparison of self-assessment, peer assessment, and tutor assessment scores, and to investigate whether there were statistically significant differences among them. This non-parametric statistical test was applied to determine whether there were statistically significant differences across two or more related groups. To identify the specific measurements for which differences occurred, pairwise comparisons were conducted using the Wilcoxon Signed-Ranks Test. Upon completion of online microteaching practices, interviews were conducted with students to ascertain their views on the process. The interview data were subjected to content analysis, and themes were established. To assess the study's reliability, the researcher and two field experts independently formulated themes, which were subsequently compared for consistency.

Findings

Findings Related to Self-, Peer, and Tutor Assessments

Students initially conducted self- and peer assessments of online microteaching sessions using the rubric. Subsequently, using the same rubric, the tutor evaluated each student's performance, by reviewing recorded course sessions. Table 2 presents mean scores and standard deviations for each dimension within the rubric and for the aggregate of all items in the rubric, pertaining to self-, peer, and tutor assessments.

Table 2

Descriptive Statistics

Dimension	Self-assessment		Peer assessment		Tutor assessment	
	$\bar{X}$	*SD*	$\bar{X}$	*SD*	$\bar{X}$	*SD*
Introduction	11.25	3.28	11.54	1.74	6.88	3.09
Implementation	17.125	4.49	11.54	3.46	12.5	1.31
Completion	13.5	4.59	13.08	3.66	10.13	2.64
Total	46.5	19.65	46.79	15.44	29.5	6.19

It was observed that the tutor's mean assessment scores across all dimensions and in total were lower than both self-assessment and peer-assessment means. The Friedman Test was used to assess whether the differences in these scores were statistically significant. The results of Friedman Test for all three assessments are presented in Table 3.

Table 3

Friedman Test Results

Assessment	Dimension	*n*	X^2	*df*	*p*
Self	Introduction	8	9.250	2	.010*
Peer	Implementation	8	6.750	2	.034*
Tutor	Completion	8	4.323	2	.115
Total		8	9.250	2	.010*

Note. * $p < 0.05$

Considering the results of the Friedman Test presented in Table 3, it was found that statistically significant differences existed in self-, peer-, and tutor-assessment scores in both the introduction ($X^2 = 9.250$, $p < .05$) and implementation ($X^2 = 6.750$, $p < .05$) dimensions, as well as in the overall general total ($X^2 = 9.250$, $p < .05$). However, no significant difference was observed in completion of the course dimension ($X^2 = 4.323$, $p > .05$). Mean ranks pertaining to these assessments are presented in Table 4.

Table 4

Mean Ranks for Assessments

Dimension	Self-assessment	Peer assessment	Tutor assessment
Introduction	2.50	2.38	1.13
Implementation	2.38	2.38	1.25
Completion	2.44	2.13	1.44
Total	2.50	2.38	1.13

Upon analyzing Table 4, it was noted that mean ranks of self-assessment are highest across all dimensions and in the total, though they were also notably close to mean ranks of peer assessment. Mean ranks of tutor assessment were found lower than those of self- and peer assessments. Wilcoxon Signed-Rank Test was employed to pinpoint the source of differences between the rank means of these assessments. Table 5 presents comparison results between students' self-assessments and peer assessments.

Table 5

Wilcoxon Signed-Rank Test Results: Comparing Self-Assessments and Peer Assessments

Dimension	Rank	*n*	Mean rank	Sum of ranks	*z*	*p*
Introduction	Negative	4	3.50	14.00	-.562	.574
	Positive	4	5.50	22.00		
	Ties	0				
	Total	8				
Implementation	Negative	4	3.63	14.50	-.491	.624
	Positive	4	5.38	21.50		
	Ties	0				
	Total	8				
Completion	Negative	5	4.70	23.50	-.771	.441
	Positive	3	4.17	12.50		
	Ties	0				

	Total	8				
Total	Negative	4	4.38	17.50	-.070	.944
	Positive	4	4.63	18.50		
	Ties	0				
	Total	8				

Note. * p <0.05

Based on Wilcoxon Signed-Rank Test results in Table 5, there was no significant difference between self- and peer assessments. These findings indicated that when evaluating their own performance, students' self-judgment aligned closely with that of their peers. Wilcoxon Signed-Rank Test results comparing students' self-assessment with tutor assessment are presented in Table 6.

Table 6

Wilcoxon Signed-Rank Test Results: Comparing Self-Assessments and Tutor Assessments

Dimension	Rank	*n*	Mean rank	Sum of ranks	*z*	*p*
Introduction	Negative	8	4.50	36.00	-2.533	.011*
	Positive	0	0.00	0.00		
	Ties	0				
	Total	8				
Implementation	Negative	7	4.93	34.50	-2.325	.020*
	Positive	1	1.50	1.50		
	Ties	0				
	Total	8				
Completion	Negative	6	4.17	25.00	-1.866	.062
	Positive	1	3.00	3.00		
	Ties	1				
	Total	8				
Total	Negative	8	4.500	36.00	-2.521	.012*
	Positive	0	0.00	0.00		
	Ties	0				
	Total	8				

Note. * p <0.05

According to the results in Table 6, a significant difference was observed between self-assessment and tutor assessment in the dimensions of introduction (z = -2.533, p < .05) and implementation (z = 2.325, p < .05), as well as in total score (z = -2.521, p < .05). The fact that the difference scores favoured negative ranks indicated that the tutor assessment was significantly lower than the self-assessment.

The comparison results of the Wilcoxon Signed-Rank Test for students' peer and tutor assessment are presented in Table 7.

Table 7

Wilcoxon Signed-Rank Test Results: Comparing Peer and Tutor Assessments

Dimension	Rank	*n*	Mean rank	Sum of ranks	*z*	*p*
Introduction	Negative	7	5.00	35.00	-2.383	.017*
	Positive	1	1.00	1.00		
	Ties	0				

	Total	8				
Implementation	Negative	7	5.00	35.00	-2.383	.017*
	Positive	1	1.00	1.00		
	Ties	0				
	Total	8				
Completion	Negative	6	5.17	31.00	-1.823	.068
	Positive	2	2.50	5.00		
	Ties	0				
	Total	8				
Total	Negative	7	5.00	35.00	-2.380	.017*
	Positive	1	1.00	1.00		
	Ties	0				
	Total	8				

Note. * p <0.05

According to results in Table 7, there was a significant difference between peer assessment and tutor assessment in the introduction (z = -2.383, p < .05) and implementation dimensions (z = -2.383, p < 0.05), as well as in the total score (z = -2.380, p < .05). The fact that the difference scores favoured negative ranks indicated that tutor assessment was significantly lower than peer assessments.

Findings Including Students' Opinions on Online Microteaching Practice

Following the completion of the self-, peer, and tutor assessments, students were interviewed regarding their experiences with online microteaching practice. These interviews were crucial for a thorough and detailed exploration of aspects that could not be captured through the rubric. The frequency and percentage values of the 11 themes emerged as a result of the interviews are given in Table 8.

Table 8

Themes and Frequency

Themes	*f*	%
Self- and peer assessment	14	18.92
Teaching methods and techniques	13	17.57
Teaching experience	9	12.16
Teaching principles	9	12.16
Communication	7	9.46
Time management	5	6.76
Planning	5	6.76
Instructional material	4	5.41
Technology	3	4.05
Field knowledge	3	4.05
Excitement	2	2.70
Total	74	100.00

The influence of self- and peer assessments on students' learning and development of their teaching practice is highly significant. In this context, the self- and peer assessment theme emerged as the topic most often emphasized in the interviews. This theme encompassed both positive and negative perspectives. The views of students who expressed that self- and peer assessment were beneficial and contributed to the improvement of their teaching skills are detailed below.

> When I conducted my own assessment and analyzed my friends' assessments, I realized that there were many points that I needed to take into account. (S4)

> The assessments made by my friends were very helpful. Especially at the end of the lesson, they found that I didn't give information about the next lesson. (S6)

Student views revealed that self- and peer assessments enabled students to evaluate and improve their teaching practices. These assessments provided valuable insights, helping students to identify and address weaknesses in their teaching approaches. Moreover, within the theme of self- and peer assessment, some students expressed concerns that knowing they would be evaluated by their peers negatively impacted their lectures, or they felt disappointed with the scores received. For example:

> In fact, although I should have been in charge of the class, I felt like a student making a presentation, not like a teacher, and the people in front of me felt as if they were only watching me to evaluate me. (S2)

Teaching methods and techniques emerged as the second prominent theme from the interview data analysis, accounting for 17.57% of the responses. Based on the reflections in their self-assessments during online microteaching practice, students recognized shortcomings in their teaching methods and techniques. Additionally, students expressed a preference for traditional face-to-face education over the online method.

> I wish I could apply what you have taught throughout the year, such as the way of addressing students, speaking effectively, actively participating in the lesson, and attracting students' attention, when the opportunity comes. (S1)

> I think communication is the biggest challenge in distance education. I couldn't even determine whether the students understood the subject or not. (S8)

When the assessments made from the students' perspective were analyzed, the results also revealed that they would manage the course process better and be more effective in using teaching methods and techniques if they would do online microteaching practice again.

> If I were to teach the same course again, I would manage time more effectively and engage students in lesson by asking questions or encouraging them to ask their own. (S3)

> If I had the opportunity to present my lesson once more, I would definitely include a practical activity. (S8)

The theme of teaching experience, in which students were acquainted with online microteaching technique, emerged as well (12.16%). This practice not only enabled students to apply the concepts learned in PEI course through microteaching but also provided them with first-hand experience in conducting an online course. Students' statements reflect how this process influenced their concepts and skills in teaching.

> I think microteaching really contributed to my skills in classroom management, student observation, and teaching. After my own classroom management experience, I realised that I should see my shortcomings and look at them from a different perspective. (S2)

> Having taught through distance education, I've realized it's more challenging than it appears and requires distinct methods. (S3)

> The fact that I decided on the content and time of the lesson gave me a good experience in understanding how to plan like an educator. (S5)

Another theme that emerged from students' responses to interview questions was that of teaching principles (12.16%), which included the basic principles for creating an effective learning environment. The sample sentences below exemplify the principles of (a) closeness to life, (b) openness, (c) moving from the known to the unknown, and (d) relevance to the student.

> I would incorporate aspects of daily life more into the lesson to make it more enjoyable and flowing. (S2)

> I feel I fall short in assessing the extent of students' prior knowledge about the topic and in engaging my peers during the lesson. (S3)

The general feedback from students following the online microteaching practice was that it had been highly beneficial in helping them recognize their own shortcomings.

In this study, students expressed challenges within the theme of communication (9.46%). While most students found teaching via distance education methods to be an exciting experience, it also posed challenges in effectively communicating with other students and monitoring the learning process. The following are sample sentences related to this theme.

> It was more difficult than I thought to keep the pulse of the students. (S4)

> Distance education was a more difficult teaching method in terms of establishing control over the classroom and communicating with students. But it was advantageous to have the computer at your disposal and the ability to join the course from any location. (S5)

Microteaching, which is crucial in enhancing the teaching skills of PSTs and in steering their learning processes, can present challenges in terms of time management and content planning. Time management (6.76%) emerged as another theme; the following sample statement was related to this theme.

> I think I didn't manage my time effectively. Although I rehearsed the lesson in advance, I somewhat exceeded the allotted time. (S3)

The importance of planning, whereby PSTs develop strategies for student needs and learning objectives by determining the course process in advance, was also revealed when student opinions were analyzed. Participants emphasized the importance of planning educational activities (6.76%).

> If I were to teach it again, I would prepare with better planning. (S1)

The selection and design of instructional materials used in online microteaching were seen as key factors that influence the effectiveness of the educational process. The following are participant expressions for the theme instructional material (5.41%).

> I made a new and different presentation by learning the Prezi application, I made a difference, but everyone prepared it from ordinary PowerPoint, I think I attracted attention with pictures and animations. (S1)

> In hindsight, supplementing the presentations with videos would have been better for capturing attention. (S5)

The use of technology in online microteaching activities had a significant impact on students' teaching. Difficulties encountered by students in using technology were categorized under the theme technology (4.05%).

> I forgot to record my first lesson, leading us to do a second recording next day. The lesson I recorded was actually my second time teaching it to my friends, so to avoid taking up more of their time, I couldn't elaborate much in the first lesson and missed covering several points I wanted to address. (S4)

Students' proficiency in their subject area was a crucial factor influencing their performance in online microteaching sessions. Insights regarding this aspect were categorized under the theme field knowledge (4.05%).

> This lack of mastery negatively impacted my presentation. (S1)

The expressions of excitement felt by students during their online microteaching experiences and how this affected their teaching process were categorized under the theme excitement (2.70%).

> I was very excited and worried about not being able to convey the subject. (S2)

The interview data shed light on students' experiences with online microteaching and how these experiences influenced their teaching abilities. Microteaching facilitated students' development of awareness in various aspects, including lecturing techniques, content preparation, and the use of technology. Self- and peer-assessment processes allowed students to evaluate and enhance their teaching methods. Although students perceived online education as less effective compared to face-to-face instruction, they acknowledged that experience of online teaching significantly contributed to their professional development.

Discussion and Conclusion

Findings from the self-assessments, peer assessments, and tutor assessments in this study revealed that there was no significant difference between students' self-assessments and peer assessments. However, tutor assessments differed significantly from the student assessments, both self- and peers. Therefore, while it can be concluded that students possess a self-judgment similar to their peers in evaluating their own performance, it appears that the tutor adopts a more critical and distinct perspective. This result aligned with findings from previous research, indicating that tutors tend to assign lower assessment scores compared to students (Papinczak et al., 2007). To mitigate the discrepancies between students' and the tutor's assessments, it is crucial to offer students more comprehensive and detailed training regarding assessment processes and academic expectations. For an effective assessment process, it is essential to educate students about evaluation criteria and enhance their skills in giving feedback.

Research on the impact of employing self- and peer assessment in educational settings has indicated that these types of assessments can enhance students' critical thinking skills, self-regulation strategies, and learning motivation (Duncan & Joyner, 2019). Self- and peer assessments helped students thoroughly analyze their teaching practices, pinpoint their strengths and weaknesses, and receive constructive feedback. On the other hand, some students reported that self- and peer assessments created pressure on their teaching, adversely impacting their performance, or that their expectations were not met regarding the scoring in peer assessments. These perspectives highlighted the delicate nature of assessing students' performance and the influence of individual perceptions on this process. In light of these findings, it can be concluded that incorporating self- and peer assessments in teacher education programs serves as a valuable tool for students to enhance their own abilities (Güneş & Kılıç, 2016), but the potential risks of stress and pressure associated with these processes should not be overlooked.

Online microteaching provided significant learning opportunities regarding the use of teaching methods and techniques, and enabled students to identify areas where their own teaching practices need improvement. While students highlighted the benefits of face-to-face education in fostering student engagement, capturing attention, and employing effective speaking techniques for teaching, they noted the absence of these elements in the online environment. However, some students reported that they adapted well to the online environment. While acknowledging the challenges faced in online microteaching, they also expressed their ability to make necessary adaptations and improvements to overcome these difficulties. Moore et al. (2011) emphasized that effective teaching in an online education context necessitates specific strategies and techniques going beyond those employed in traditional face-to-face education.

Microteaching helped students reinforce core topics of the course curriculum and offered a significant opportunity for them to acquire teaching experience within an online educational environment. Additionally, through the practice of online lecturing, students learned about the role of technology in education, challenges presented by this environment, and various alternative teaching methods. The academic literature has recognized that microteaching practices significantly contributes to professional development of PSTs (Evangelou, 2022; Reddy, 2019). Furthermore, it has been noted that microteaching helps PSTs transform their theoretical knowledge into practical skills, experiment with teaching strategies, and enhance their classroom interaction abilities. Küçükoğlu et al. (2012) observed that students with microteaching experience faced fewer challenges compared to those without experience.

Students' feedback following their online microteaching practice underscored the importance of the teaching principles theme. Fundamental teaching principles, such as (a) relevance to real-life, (b) openness, (c) progression from known to unknown concepts, and (d) student-centeredness are critical to establishing effective learning environments. These principles have been recognized as pedagogical strategies that enhance the effectiveness of a student-centered teaching approach, as well as the efficiency of both students and the overall teaching process (Sünbül, 2011). Pedagogical approaches, such as (a) using content resonating with daily life to heighten students' interest in course materials and enhance flow of the lesson (Dewey, 1986); (b) building upon students' existing knowledge to facilitate learning of new information (Ausubel, 1968); and (c) considering individual student differences to effectively meet each student's learning needs (Tomlinson, 2001) have been extensively covered in educational literature.

Through online microteaching practice, students gained experience in areas such as communication, time management, lesson planning, and the use of teaching materials. A notable issue generally experienced by students in online microteaching was the lack of effective communication, a finding supported by various studies. Karataş and Cengiz (2016) contended that communication issues in online microteaching arose from the absence of a traditional classroom setting, affecting how lessons were delivered to peers. Altan (2023) highlighted that the online environment presented certain limitations, such as inability to use body language, gestures, and eye contact effectively. He also noted that these limitations led to PSTs feeling isolated during online microteaching sessions. Regarding time management, it was observed that students struggled to use time effectively and efficiently in online microteaching practices. Time management is critically important in teaching. Findings of this study suggested that PSTs needed to work on improving their time management abilities during microteaching sessions. While Merc (2015) pointed out the issue of time constraints in microteaching practices, Karataş and Cengiz (2016) noted that these conditions provide a valuable opportunity for students to learn effective use of time. In general, PSTs need opportunities to improve their ability to (a) capture students' attention, (b) pose questions, (c) use and manage time effectively, and (d) conclude lessons efficiently (Kilic, 2010).

Strategic instructional planning focused on desired outcomes is crucial for effective teaching (Burleson & Thoron, 2014). Variations between planned and actual lessons during online microteaching sessions helped PSTs integrate theoretical knowledge and planning skills with real-time teaching experiences. It helped them develop their ability to comprehend the dynamics between planning and implementation, and to adapt educational strategies to real-time scenarios.

Analysis of students' statements indicated that teaching materials used in lectures should be engaging and distinctive. In online education, quality of these teaching materials is critical for the success of distance learning (Yildiz & Isman, 2016). In educational programs, equipping PSTs with skills to design and use instructional materials, as well as providing them with the necessary hardware and software, is considered essential for success in contemporary educational environments.

In this study, more specific themes, such as technology and content knowledge, also emerged. While the integration of technology in online education provides numerous opportunities, it simultaneously presents certain challenges. Such technological challenges represent practical issues that students encounter during microteaching practices, and their ability to overcome these challenges can influence their overall teaching performance. It is crucial for educational programs to more adequately prepare PSTs in the use of technology and to equip them with the necessary skills to be effective in online teaching environments. Altan (2023), noted that online microteaching practices enhanced PSTs' digital teaching skills, bolstered their commitment to teaching even in challenging circumstances, and strengthened their perceptual readiness for teaching in diverse educational settings.

Students' performance in online microteaching was closely tied to their subject knowledge, crucial for effectively presenting material and addressing student questions in depth. The impact of excitement on teaching should be regarded as a significant factor (Bunk et al., 2015). In the teaching process, excitement can serve as both a hindrance and a source of motivation. While it may be obvious that anxiety hampers students' performance, excitement can also drive them to be more meticulous and attentive. Therefore, educational programs should include instruction on managing such emotional responses and developing strategies to cope with them effectively. Additionally, several studies have highlighted that students experience anxiety due to being observed while presenting their lessons

(Donnelly & Fitzmaurice, 2011; Mahmud & Rawshon, 2013). These practice sessions typically represent PSTs' initial teaching experiences, and this anxiety can adversely affect their teaching activities (Karataş & Cengiz, 2016). However, Merc (2015) asserted that microteaching experience was an effective method for reducing PSTs' anxiety. In contrast, Altan (2023) highlighted the physical and emotional comfort experienced by PSTs during online microteaching.

This study, by examining the alignment among students' self-, peer, and tutor assessments, offers insights into the consistencies and discrepancies within assessment processes. Consequently, this study can serve as a significant step towards enhancing students' assessment skills and increasing their reliability. Additionally, this study offers a critical perspective on how students perceive and evaluate their experiences in online microteaching. It can contribute to identifying strategies that could be implemented to improve learning experiences and enhance student satisfaction in online microteaching environments.

The process of re-planning and re-implementation in microteaching is critical in terms of transforming the feedback given to students into practice and developing their teaching skills. Therefore, in future studies, PSTs can be encouraged to review their own performances after their first implementations, re-plan, and implement their lessons again in line with these plans. This study's limitation is its small sample size, comprising only doctoral students from various disciplines in a specific semester at the research institute. This restricts the findings' generalizability to a broader student population or different academic fields. The results of the study will contribute to the field about the applicability of online microteaching application in higher education or vocational training programs and evaluations by self, peers, and tutors.

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