BARRIERS FACED BY PRE-SERVICE TEACHERS IN PRACTICING MICRO-TEACHING ONLINE

RÀO CẢN GIÁO SINH GẶP PHẢI KHI THỰC HÀNH DẠY HỌC VI MÔ TRỰC TUYẾN

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Abstract - The study aimed to identify barriers to online micro-teaching practice from the perspective of fourth-year students at University of Danang – The University of Foreign Language Studies (UD-UFLS). The Technology-to-Performance Chain (TPC) model developed by Goodhue and Thompson was used as the conceptual framework to explore these limitations [1]. A mixed-methods approach, combining both quantitative and qualitative research, was employed. Participants were pre-service teachers at UD-UFLS. They provided information about their online micro-teaching experiences through questionnaires, followed by interviews that were conducted to gather further data on the difficulties they encountered during the process. The results present the challenges faced during online micro-teaching practice and offer several recommendations to help address these issues.

Key words - Pre-service teachers; micro-teaching online; perception; barriers; technology-to-performance chain model (TPC)

Tóm tắt - Nghiên cứu nhằm xác định những rào cản trong việc thực hành dạy học vi mô trực tuyến từ góc nhìn của sinh viên năm tư tại Trường Đại học Ngoại ngữ – Đại học Đà Nẵng (UD-UFLS). Mô hình Chuỗi công nghệ – hiệu suất (Technology-to-Performance Chain – TPC) do Goodhue và Thompson phát triển được sử dụng làm khung lý thuyết để khám phá những hạn chế này [1]. Nghiên cứu sử dụng phương pháp nghiên cứu hỗn hợp, kết hợp giữa định lượng và định tính. Đối tượng tham gia là sinh viên sư phạm tại UD-UFLS. Các sinh viên cung cấp thông tin về trải nghiệm dạy học vi mô trực tuyến thông qua bảng khảo sát, sau đó tham gia phỏng vấn để thu thập thêm dữ liệu về những khó khăn gặp phải trong quá trình dạy học. Kết quả nghiên cứu cho thấy những thách thức trong quá trình thực hành dạy học vi mô trực tuyến và đưa ra một số khuyến nghị nhằm khắc phục các vấn đề này.

Từ khóa - Sinh viên sư phạm; dạy học vi mô trực tuyến; nhận thức; rào cản; mô hình chuỗi công nghệ – hiệu suất (TPC)

1. Introduction

As stated by Pelgrum [2], Information and Communication Technology (ICT) is not only the backbone of the Information Society but also a critical driver and resource for educational reforms aimed at transforming students into productive knowledge workers. Despite this optimistic view, the integration of ICT in classrooms has not kept pace with the rapid expansion of digital technologies [3]. Consequently, many students continue to face significant challenges in utilizing ICT effectively for learning. Since the COVID-19 pandemic, Vietnam has adopted online learning in higher education and achieved several notable outcomes [4]. Although students across the country encountered various difficulties in attending online classes, this mode of delivery remained the only feasible solution to sustain teaching and learning activities during the pandemic. While many international studies have explored the challenges faced by pre-service teachers during online micro-teaching, research on this topic in Vietnam remains limited. In response to this gap, the present study aims to examine the perspectives of pre-service teachers regarding the difficulties they experienced when participating in online micro-teaching at UD-UFLS. The following research question guided the current study: What barriers do pre–service teachers encounter when practicing micro-teaching online?

2. Literature Review

2.1. Online Learning

Online learning is the experience in synchronous or asynchronous environments using various devices (e.g., mobile phones, laptops, etc.) with an internet connection. Students can learn and connect with teachers and other students from anywhere in these settings. Web-based learning, Internet-based learning, virtual learning, cyberlearning, or net-based learning are all terms used by Urdan and Weggen [5] to describe a subset of distance education known as "online learning." Basic processes of online learning courses include "text and graphics of the course, exercises, testing, and record-keeping," while more complex ones include "animations, simulations, audio and video sequences, peer and expert discussion groups, online mentoring, links to material on the web, and communication with corporate education records". The majority of interactions between teachers and students, as well as interactions among students themselves, are facilitated by learning management systems [6].

Even though ICT adoption has been proven to benefit both teachers and learners, several hindrances still exist. Atmojo et al. [7] revealed that online teaching and learning of the English language face challenges, including technology-related pedagogies, designing interactive activities, and dealing with problems in the use of technology. In addition, gender [8] is a factor that hinders students when learning online. Poor motivation and expectations, resource-intensiveness, unsuitability for all disciplines or materials, and a lack of information technology skills were all identified as impediments. In Vietnam, the use of online learning presents a variety of challenges, including issues related to the internet system and transmission line [9], unguaranteed network information security [10] and difficulty in using applications and software for learning [11].

2.2. Micro Teaching

Before attending teaching practice programs, pre-service teachers go through a full semester of micro-teaching engagement on campus, during which, according to Mahmud and Rawshon [12], students are offered the opportunity to practice teaching activities under controlled and simulated circumstances. Experts and educators have interpreted micro-teaching in various ways. According to Bell [13], the term "microteaching" refers to "the common practice of having students in educational methods courses teach a lesson to their peers in order to gain experience with lesson planning and delivery" (p. 24). As stated by Aggrawal [14], micro-teaching is a training program that aims to simplify the complexities of the teaching process. Teaching practice is regarded as the most significant aspect of pedagogical studies because it allows future teachers to participate fully in school life by giving student-teachers real-world teaching and learning experience.

Pre-service teaching is an initial professional step and a chance to experience the challenging yet fulfilling work of taking on substantial teaching duties, with the aim of acquiring professional competencies and the necessary experience for future classroom performance. Teaching practice is one of the challenges that pre-service teachers must overcome as a necessary component of becoming a qualified educator. Görgen [15] states that pre-service teachers can experience real teaching situations through micro-teaching and have the opportunity to transfer their teaching knowledge into practice.

Nevertheless, pre-service teachers are confronted with a variety of situations when practicing. They must demonstrate understanding of the subject content, and they must also prove their ability to manage classrooms, use appropriate teaching methods, and assess their students. Yalçınkaya [16] pointed out several challenges they may face: (a) insufficient practice; (b) conflict between theory and practice; (c) being under pressure; (d) being idealistic; and (e) worry related to school inspections.

Since the outbreak of the COVID-19 pandemic, online micro-teaching has become increasingly prevalent. Online micro-teaching is projected to enrich didactic skills among teacher candidates, as it encourages self-reflection, peer evaluation, and teacher feedback using multimodal assessment mechanisms. However, some issues may arise, requiring teacher candidates to integrate technology into their journey toward becoming future educators. In a study on the implementation of online teaching placements during the pandemic, Sepulveda-Escobar and Morrison [17] found that teacher candidates faced significant challenges in online micro-teaching for various reasons, including limited experience in online instruction, which led to difficulties in implementing strategies traditionally used in face-to-face contexts.

2.3. Technology-to-performance Chain Model (TPC)

The Technology-to-Performance Chain (TPC) model developed by Goodhue and Thompson was utilized as the main conceptual framework in this study to shape a clearer understanding of the actual hurdles to ICT implementation in education. The TPC model, as explained by Staples et al. [18], is a powerful tool for evaluating system usage and its impact on task performance. Goodhue and Thompson [1] also introduced the concept of Task-Technology Fit (TTF), which helps guide individuals toward improved performance and served as the foundation for developing the TPC model. According to the TPC model, technology should be both utilized and aligned with the tasks it supports in order to achieve a positive performance effect. The model provides a more accurate view of the relationships between technology, user tasks, and system utilization as they influence performance outcomes. This paper applies the TPC model as a conceptual framework to guide the formulation of research question and the design of both questionnaires and interview questions. The TPC model served as the foundation to explore limitations related to ICT application in this study.

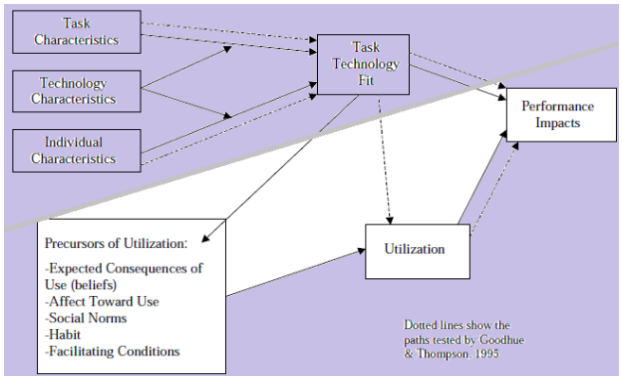

Figure 1. *The TPC model*

3. Research Methods

In the current study, mixed methods were employed to achieve the stated goals and objectives. The mixed-methods approach was expected to enable comparison and contrast of findings. The study used a variant of the TPC model to assess pre-service teachers' adoption of technology by combining self-reported data from 65 participants at UD-UFLS to generalize the hindrances encountered when adopting technology in micro-teaching practice through questionnaires. In addition, interviews were conducted with 12 pre-service teachers to gain an in-depth understanding of their experiences. Both the interviews and questionnaires were conducted after the students had completed the Methodology course.

A 5-point Likert scale questionnaire was utilized in this study because it was easier for participants to understand and allowed the researchers to obtain more accurate data. The questionnaire had two sections. The first section focused on participants' general information. The second section, adapted from Alkhawaldeh [19], was based on four variations of the TPC model. After completing the questionnaire, participants engaged in a semi-structured interview lasting just over 7 minutes. Twelve students were randomly selected from the original group of 65 to provide more in-depth information [1]. The interview offered insights into students' overall attitudes toward the hindrances they faced when utilizing technology in learning, and gained further information and deeper understanding of the students' perceptions.

Both quantitative and qualitative data analysis methods

were employed in this study. In the first phase of data analysis, the SPSS statistical software was used to analyze the questionnaire responses. The researcher then coded and analyzed the qualitative data from the semi-structured interviews using thematic content analysis.

4. Findings and Discussion

As emerged from the qualitative data, there are three core themes which represent the challenges perceived by the students when practicing online micro-teaching. Most of the identified challenges are consistent with the findings from previously reviewed studies.

4.1. Expected Consequences of Use and Affect toward Use

The students' perception of the expected consequences of use and affect toward use were analyzed and summarized in Table 1.

Table 1. *Expected consequences of use & affect toward use*

No	Item	N	M	S.D
1	You have problems when organizing different types of class activities.	65	3.78	0.89
2	You cannot set up the lesson plan for online class.	65	3.64	1.32
3	You cannot interact with "students"	65	3.55	1.17
4	You do not feel confident when practicing micro-teaching online.	65	2.36	1.08
5	You are not motivated to do the lesson plan.	65	3.40	1.40

The means of each factor were ranked to show the impact of these barriers on students' online micro-teaching practice. As presented in Table 1, the most influential factor for pre-service teachers was the problems they had when organizing different types of class activities (M = 3.78). Lesson planning and interaction with "students" were the next most significant challenges (M = 3.64 and 3.55, respectively). Additionally, the majority of participants (M = 3.4) stated that they were not motivated to complete the lesson plan. The least severe barrier was related to the performers' confidence during the lesson.

The quantitative data analysis was validated by the qualitative data obtained from the interviews. Some students shared their personal experiences during semi-structured interviews while conducting online micro-teaching:

I1. *Micro-teaching is an opportunity to improve pre-service teachers' learning and performance, and it helps us understand how to teach lessons both online and offline. But when I taught online, I found it difficult to organize various types of class activities. Most of the time, I just relied on screen sharing and PowerPoint.*

I3. *It will improve learning and teaching more, which will also make the process more enjoyable. However, making a lesson plan for online teaching was very confusing for me.*

4.2. Habit

Table 2 highlights and interprets the data on habits. Table 2 shows the means of each factor, ranked to reflect the impact of these barriers on students' online micro-teaching practice. Most participants stated that they preferred the conventional micro-teaching practice over the online micro-teaching process (M = 3.9). Teamwork was also identified as a challenge when learning and practicing online (M = 3.55). Technical skills and discipline problems were recognized as minor challenges in their online learning (M = 2.8 and 2.78, respectively).

Table 2. *Habit*

No	Item	N	M	S.D
6	You prefer conventional micro-teaching practice to online one.	65	3.90	0.93
7	You have problems when doing teamwork.	65	3.55	1.38
8	You have discipline problems.	65	2.80	1.04
9	You feel difficult to integrate technology into your practice.	65	2.78	1.51

The quantitative data analysis was supported by the qualitative findings from the interviews. Some students shared their own experiences with online micro-teaching during the semi-structured interviews:

I2: *I am in favour of traditional methods because they sometimes make us feel less lonely. We might feel like they are not facing academic challenges alone and can even build more confidence. I prefer the traditional mode because I want to interact face-to-face with other students, use real materials, and have more physical interaction.*

I8: *I like both types of micro-teaching; however, I prefer offline because it is more practical, and I can practice writing on the board and managing the classroom.*

I12: *I don't like teaching over the internet. I've always wanted to have a cheerful and engaging classroom environment, but when I taught online, only a few students showed up. In addition, when I shared my screen, I couldn't see my friends—I often felt like I was just talking to the screen alone.*

4.3. Facilitating Conditions

Details regarding facilitating conditions can be found in Table 3.

Table 3. *Facilitating conditions*

No	Item	N	M	S.D
10	You have problems with background noise.	65	3.87	0.97
11	You cannot make the best use of teaching aids.	65	3.66	0.94
12	You do not have good internet access.	65	3.55	1.22
13	You have problems with your equipment (camera, earphones, etc.).	65	3.35	1.13
14	You have limited time to prepare for the lesson plan.	65	3.00	0.96
15	You cannot balance school tasks and others.	65	3.00	0.96
16	You cannot have access to the reference source.	65	2.47	1.07

The effects of these barriers on students' online micro-teaching practice were evaluated using the mean scores of each category. As shown in Table 3, background noise concerns (M = 3.87), followed by misunderstandings about how to use instructional aids, were the most impactful factors for pre-service teachers. Internet

connectivity (M = 3.55) and technical equipment (M = 3.35 were also noted as contributing factors. While learning and practicing online, time constraints and task imbalances were rated as the least severe barriers (M = 3). Reference sources were seen as a minor impediment to their online learning (M = 2.47).

Quantitative and qualitative data analysis interviews were conducted simultaneously. Some students shared their personal experiences during semi-structured interviews while undertaking online micro-teaching:

I1: *Equipment for connecting to the internet, such as routers and security systems, was not always reliable.*

I2: *It's quite hard to make the lesson interesting since I only had some PowerPoint games. I tried to prepare some teaching aids, but I wasn't confident in demonstrating the activity to the class because I was afraid of running out of time.*

I5: *I live in a rural area, and my internet connection is unstable because I use 4G instead of a Wi-Fi connection.*

I7: *Our teacher didn't seem to know how to use the technology systems, so it was quite hard for us when we encountered difficulties, as we didn't know who to ask for help.*

I11: *I couldn't keep up with the pace. I often overslept and missed parts of my friends' lessons. I couldn't concentrate fully on the lesson.*

The findings from the quantitative and qualitative data provided sufficient information to investigate the participants' experiences throughout their online placement and answer the research question. Pre-service teachers at UD-UFLS had mixed feelings about the implementation of online micro teaching in the Methodology 3 course. The majority of them have encountered various challenges while practicing micro-teaching online. Participants agreed that practicing micro-teaching online not only ensured their learning continuity when they cound not have face-to-face practice, but also provided a novel teaching experience despite certain hindrances. The results imply that, despite the potential to learn and explore new technology, the problems faced by prospective teachers outweighed the benefits in the long run. There were three categories of challenges, as recommended by the TPC model [1]. These findings align with the results obtained in prior studies conducted by Sepulveda and Morrison [17] and Pham [20]. The absence of engagement with students - which could influence their professional development - was considered the most unfavorable and challenging component of the emergency online teaching placement.

5. Conclusion

The study revealed a range of insightful findings. Based on the data analysis, pre-service teachers at UD-UFLS faced numerous challenges while practicing micro-teaching on an online learning platform. These included limited time, insufficient interaction, low motivation, and various technical difficulties.

Some practical implications are put forward based on the findings of the study. Firstly, teacher education programs should integrate face-to-face, blended, and online learning modes to prepare pre-service teachers for both virtual and physical classrooms. Online micro-teaching can be a valuable method to develop digital teaching competencies, which are increasingly essential in modern education. Secondly, universities need to upgrade their Internet infrastructure and provide adequate technical support staff to ensure the smooth implementation of hybrid or online teaching practices. Thirdly, pre-service teachers should set clear goals and lesson objectives before teaching, prepare backup plans in case of technical issues or time constraints, check all equipment in advance and join classes early, practice in quiet settings and allocate time for teamwork and collaboration.

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