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PROMOTING ONLINE TEACHING ABILITIES OF COMPUTER TEACHER STUDENTS THROUGH REMOTE LEARNING ACTIVITIES WITH COMPETENCY-SIMULATED CLASSROOM

(Research article)

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Abstract

This study aimed to 1) investigate the results of remote learning combined with competency-based classroom simulation activities, including academic achievement, the ability to teach online, and learning satisfaction, and 2) compare among the self-assessment, the lecturer's assessment, and the classmates' assessment of the pre-service computer teachers' online teaching ability. The samples consisted of 18 fourth-year students who were chosen by using a cluster random sampling lottery method. A unit is a group of classes. The statistics employed in the research were mean, standard deviation, t-test (Dependent Samples), and F-test (One-way ANOVA). The findings were reported that students had post-test scores higher than pre-test scores at the level of 0.05. The self-assessment, lecturer's assessment, and the classmates' assessment of the pre-service computer teachers' online teaching ability were at the highest level. The students' satisfaction with remote learning combined with competency-based classroom simulation activities teaching online by pre-service computer teachers was at the highest level, and in the overall aspect, the comparative results of the pre-service computer teachers' self-assessment, the lecturer's assessment, and the classmates' assessment were not different.

Keywords: remote learning, competency-simulated classroom, teacher students

1. Introduction

The advancement of education in the twenty-first century necessitates the development of new strategies to help students prepare to succeed in both work and life. As a result, learning by doing must be regarded as a core competency in education. In addition to gaining theoretical and practical knowledge, situational analysis and problem-solving must be practiced in a planned sequence in many situations, including those that are like those that must be practiced in the future, to aid in knowledge transfer and application in various situations as appropriate. The simulation experience was coupled with a de-briefing session with a teacher educator, which aimed to further increase pre-service teachers' confidence and preparedness.

The World Health Organization has declared a public health emergency in the event of a coronavirus pandemic in 2019. As a result, educational institutions are unable to provide regular teaching and learning opportunities. As a result, online instruction is critical today, allowing the Office of the Basic Education Commission to steer the growth of the Ministry of Education's platform. to communicate online. For secondary school teachers conduct training to develop teachers' potential in online teaching using online tools (Nuangchalerm et.l., 2021; Thongbunma et.al., 2021). Online teaching and learning of computer disciplines, which has to adapt learning activities to empower students to have online teaching capabilities (Nuangchalerm et.al., 2020).

With scenario-based learning management, online technologies handle remote learning and online teaching practice. It is a method of teaching pupils to play in circumstances where the roles, data, and rules of play mimic reality and interact with the objects in the situation, utilizing

data that is comparable to that of reality. In making decisions and solving problems, the decisions affect players in the same way that occur in real-world situations, it is an opportunity to practice a number of different process skills, such as the process of interacting with others. Communication processes, decision-making processes are based on the concept of combining a variety of teaching methods.

The combination of learning activities will encourage students to have a wide range of performances. It is a remote learning mix of performance base classroom simulation activities. To provide computer teacher students with online teaching experience. When going out to practice teaching in schools, students have confidence in teaching and can provide effective teaching. From the importance and origin of the above-mentioned problems. The researchers then conducted research on the study and design of remote learning activities, combining performance base classroom simulation activities to promote the online teaching abilities of computer teacher students, which would be useful to bring the learning activities into real life.

The individual constructs meaning from experience, participation, and interaction with things in that situation using information like actual data making decisions and solving problems. It is an opportunity to practice a variety of process skills such as interaction with others, communication, decision-making, problem-solving, and thinking. Since the outbreak of Covid-19, the evaluation has widened to include investigating whether the simulation experience, coupled with a debriefing session, can act as a supplement or replacement to the 'Covid-19-modified' pre-service teachers real-world practicum experience (Aiello et.al., 2012; Putri et.al., 2021; Yatun et.al., 2021; Cheng et.al., 2022; Lestari, 2022). The 2019 coronavirus outbreak, have an impact on teaching and learning management for the basic educational course of the computer major at Kalasin University, which requires adjusting learning activities to improve students' potential of teaching online. When going out to practice teaching in an educational institution, students and computer teachers can use the Microsoft Teams tool for organizing remote learning combined with classroom simulation activities. Consequently, students will gain more confidence in their ability to manage effective teaching and learning activities.

Microsoft Teams is a useful educational tool for remote learning. It is intended to serve as a digital classroom hub. It has features that help teachers manage their classrooms in a variety of ways. Such as it also allows students to create their own learning spaces and engage in digital citizenship activities in addition to academic learning (Alameri et.al., 2020; Korkmaz & Mirici, 2021). Distance learning is blended with simulation activities in the classroom; it is a remote teaching management system that does not have a physical classroom. Classes and lectures are delivered via conference calls or the internet. This format allows for direct interaction between students and teachers. As a result, it is the type of distance learning which is the most like a traditional classroom setting (Ozudogru, 2021). The teaching style in the learning management for basic education courses has been modified. Five steps of remote learning combined with classroom simulation activities which differ from traditional classroom learning are: 1) preparation, 2) simulation presentation, 3) role selection, 4) simulation play, and 5) discussion (Khemmani, 2009). It is a method of teaching students how to act in role-playing situations. Information and game rules reflect reality and interact with things in that situation using information like actual data making decisions and solving problems will affect the player in the same way that they do in real life.

From the significance and origins of the issues, the researcher, therefore, conducted research on the remote learning in blended with competency-based classroom simulation activities on pre-service computer teachers online teaching ability. The study's findings will be useful to both student teachers and regular teachers who will use them to teach students in the future.

2. Method

This study aimed to 1) investigate the results of remote learning combined with competency-based classroom simulation activities, including academic achievement, the ability to teach online, and learning satisfaction, and 2) compare among the self-assessment, the lecturer's assessment, and the classmates' assessment of the pre-service computer teachers' online teaching ability. Detail of material and method can be provided as follows

2.1 Informants

Eighteen of fourth-year students who were studying in remote learning combined with competency-based classroom simulation activities, second semester, academic year 2021 participated in the study. Participated in research studies during November 2021-March 2022. They were selected by using the cluster random sampling lottery method and a unit is a group of classes.

2.2 Research tools

2.2.1 Remote learning was combined with competency-based classroom simulation activities throughout 18 weeks of the basic educational course' learning management. Online teaching and learning processes were designed by the researcher. The learning activities were then presented to 5 experts, including content experts, who assessed suitability at the highest level, and the efficiency of learning activities developed as efficient as 80/80.

2.2.2 The achievement test is a 40-item multiple-choice test with four response options for each item. The researcher presented the learning achievement test to three experts in the field of computer teaching to check the content and language usage. The IOC ranged from 0.67 to 1.00.

2.2.3 The online teaching ability assessment form had 5-level rating scale with four aspects and twenty items. The assessment form was then used in an experiment with third-year students (Code 62) who were not part of the sample group of 24 people with a Cronbach confidence value of 0.86.

2.2.4 The satisfaction questionnaire was a questionnaire with 5-level rating scale consisting of three aspects and twenty items. The satisfaction questionnaire was then tested with 18 third-year students (Code 62) who were not part of the sample group, yielding a Cronbach confidence value of 0.84 for the entire version.

2.3 Data collection and analysis

The structure of remote learning blended with competency-based classroom simulation activities is shown in Table 1, students learn content according to the course description according to the course objectives in the Computer Learning Management for Basic Education course, which consists of three steps: the preparatory stage, three preparations (preparing the learning environment, prepare activities, and prepare yourself), the teaching stage, three steps

(creating a planning stage, online stage, and supervision stage), and the evaluation stage, two issues (assess students' capacity to teach online in a 360-degree, and assess students' satisfaction). The online stage was designed to simulate a competency-based online classroom with five steps: 1) preparation, 2) simulation presentation, 3) role selection, 4) simulation play, and 5) discussion. When doing all activities, the researcher compared the students' pre-study and post-study test scores, using t-test statistics (Dependent Samples) with a confidence level of 95 percent. TO assess the ability to teach online and students' satisfaction. Descriptive statistics, mean, and standard deviation were used to analyze the data. Their opinions can be estimated and evaluated using the following five levels of mean: highest (4.51-5.00), high (3.51-4.50), moderate (2.51-3.50), low (1.51-2.50), and lowest (1.00-1.50). To comparison of the students' online teaching ability of self-assessment, the lecturer's assessment, and classmates' assessment, with analysis One-way variance F-test (One-way ANOVA) was tested for the difference between groups (Multiple Comparison) according to the Scheffe method.

3. Results

3.1 The trial results of the remote learning blended with competency-based classroom simulation activities

3.1.1 The structure of remote learning blended with competency-based classroom simulation.

In terms of knowledge, the scores of pre-tests and post-tests were compared using dependent t-test statistics with the reliability value of 95% as shown in Table 1.

Table 1. *The results of the comparison of pre-tests and post-tests*

Test	n	$\bar{X}$	S.D.	df	t
pre-tests	18	14.61	3.22	17	10.95*
post-tests	18	27.88	4.41		

* The t value was statistically significant at the 0.05 level

The results of the comparison of pre-tests and post-tests as presented in Table 1, shows that students had post-test scores higher than pre-test scores at the level of 0.05.

3.1.2 The results of the assessment of students' online teaching ability from the self-assessment, the lecturer’s assessment, and the classmates' assessment as shown in Table 2.

Table 2. *The results of the assessment of students' online teaching ability*

Items	The self-assessment			The lecturer's assessment			The classmates' assessment		
	Mean	S.D.	Levels	Mean	S.D.	Levels	Mean	S.D.	Levels
1. Instruction	4.51	0.59	highest	4.46	0.72	high	4.56	0.53	highest
2. Managing instruction via an online meeting program	4.48	0.57	high	4.58	0.60	highest	4.53	0.56	highest
3. The utilization of instructional media	4.67	0.50	highest	4.92	0.27	highest	4.63	0.52	highest
4. Assessment of learning	4.61	0.55	highest	4.98	0.15	highest	4.59	0.55	highest
overall average	4.56	0.55	highest	4.73	0.54	highest	4.58	0.54	highest

According to Table 2, the self-assessment, lecturer's assessment, and the classmates' assessment of the pre-service computer teachers' online teaching ability were at the highest level.

3.1.3 Analyze student satisfaction after receiving the remote learning combined with competency-based classroom simulation activities by distributing the assessment form to students as shown in Table 3.

Table 3. *Students' satisfaction after studying*

Items	Mean	S.D.	Level of readiness
1. Online classroom simulation activities based on competencies	4.93	0.25	highest
2. Online meeting program for remote learning	4.88	0.32	highest
3. The activity's impact on the capacity of teaching online	4.96	0.21	highest
overall average	4.91	0.28	highest

Table 3 shows that students' satisfaction with remote learning combined with competency-based classroom simulation activities teaching online by pre-service computer teachers was at the highest level.

3.2 The comparison of the students' online teaching ability

The comparison of the students' online teaching ability of self-assessment, the lecturer's assessment, and classmates' assessment with analysis One-way variance F-test (One-way ANOVA) was tested for the difference between groups as shown in Table 4.

Table 4. *The results of ANOVA*

	SS	df	MS	F	P
Between Groups	0.32	2	0.16	2.58	0.08
Within Groups	3.15	51	0.06		
Total	3.47	53			

Table 4 shows that, in the overall aspect, the comparative results of the pre-service computer teachers' self-assessment, the lecturer's assessment, and the classmates' assessment were not different.

4. Conclusion & Discussion

In this study, the students' post-test learning achievement was higher than their pre-test learning achievement with statistical significance at the level of 0.05. It might be because of learning management with modern programs, the researcher has introduced and educated about the use of various applications in online teaching. As a result, students are ready to use technology in learning, study the content of knowledge, and cooperate in learning activities, thus affecting learning achievement. According to Kumsawai et.al. (2022), the factor affecting learning readiness is teachers have introduced or educated about the use of various applications in online teaching. These are the factors that lead kids to learn in different situations and to be willing to experiment with new technology.

In the overall aspect, the self-assessment, the lecturer's assessment, and the classmates' assessment of pre-service computer teachers' online teaching ability were at the highest level. It might be because the learning management system includes exercises that prepare students to practice competency analysis, plan learning activities based on integrated competency based on Sufficiency Economy Philosophy, Buddhism (Tri-Sika), and produce a systematic learning plan. There is a clear, simple process and a common understanding of the stages involved in the competency-based classroom simulation activity. As a result, students can manage their learning in their online classrooms and resolve specific issues. In addition, students have more confidence in teaching. According to McGarr et.al. (2017), stated that comparing to a real classroom, simulating a virtual classroom connects theory to practice and facilitates student teachers in a more controllable environment because students and teachers work together to fix some shortcomings in teaching in order to increase the accuracy and allow for communication in what students have simulated. Dalinger et.al. (2020), studied efficiency before teaching live to students by simulating teaching with the TeachLive software. Some teachers showed increased levels of confidence when they applied skills practiced during simulation and performance to real classrooms.

Students had the opportunity to assess their ability to teach online in a 360-degree manner, which is a thorough examination that includes self-assessment, lecturer assessment, and classmates' assessment, all of which influenced online teaching ability rating. Thus, the

assessment was free from narrow perspectives or bias from only one instructor's point of view. According to Cheng & Wu (2020) assessments from other parties engaged will receive information to help fill in the gaps or distorted parts of the image. Information from a variety of perspectives and experiences will piece together a complete picture. It is better than having one evaluator. This affects the students' ability to teach online. In addition, Kumar (2021) 360-degree feedback is a participatory assessment approach, and once the evaluation is completed, the feedback is shared with all parties to provide clear thoughts and feel the assessment's growth through assessment and improvement. Its goal is to learn about organizational involvement and progress.

The students' satisfaction with remote learning combined with competency-based classroom simulation activities teaching online by pre-service computer teachers was at the highest level. Overall, the findings show that students positively perceived their online learning and were satisfied. During learning, it was found that students were eager to prepare for teaching online; this might be because teaching and learning management help to build confidence in working and increase the learning atmosphere affecting students' satisfaction. According to Partin et.al. (2011) stated that simulated teaching gives learners' satisfaction and fun. Virtual experiences lead to satisfaction and self-awareness. In addition, Azizan et.al. (2022) online learning is important for students to participate in their studies because it is the foundation of academic success. Therefore, students are satisfied with online learning which is sufficient for student learning during the epidemic. Because of flexibility and convenience, efficiency, and time-saving. Inexpensive and cost-effective, it improves the learning style and experience. Suitable for adult learning Supports health and well-being.

The comparative results of self-assessment, the lecturer's assessment, and classmates' assessment were not different; it might be because activities are designed to demonstrate sequential stages from competency analysis, practice integration of learning activities, produce a clear example-based learning plan, mutually discuss changes, and understand the learning plan activities to ensure that each student understands. Furthermore, remote learning via Microsoft Teams helped students learn how to use the program's tools without interruption when students practiced teaching online in a competency-based classroom simulation activity. As a result, they could demonstrate the lessons online which vary according to the capability of each person. Therefore, in educational institutions that produce teachers. Therefore, the classroom should be simulated for students and teachers to practice using ICT and managing their learning (Nuangchalerm, 2020; Kaleli, 2021). According to Koehler & Mishra (2009), pre-service teachers must have well-developed ICT skills and adequate experience on tools that will be useful in their future profession. Universities have the responsibility to positively influence their attitudes and adapt the curriculum to sufficiently prepare them to meet the challenges of using ICT at school. Furthermore, the researcher educated students on 360-degree evaluation methodologies and simple, easy-to-understand tests so that students, lecturers, and classmates could evaluate them appropriately. As a result, there was no difference in the ability to instruct online students.

5. Suggestions

5.1 Suggestions on applying the research findings

5.1.1 According to research, remote learning combined with competency-based classroom simulation activities can improve online teaching competence. As a result, individuals who will use it should consider the content and plan activities in accordance with the course curriculum.

5.1.2 Although experimented with pre-service computer teachers, the process of organizing remote learning activities combined with competency-based classroom simulation activities, can also be used as a guideline for teaching other subjects.

5.2 Recommendations for future research

5.2.1 Remote learning should be integrated with other forms of learning management to generate breakthroughs.

5.2.2 Should be compared to the further differences, and remote learning should be organized through additional online programs.

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