

Virtualization of Teacher Training on Improving of Online Teaching Competence for the Students of Riau Island University in Indonesia

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Abstract

The purpose of this study is to measure the effect of the virtual training to improve the students online teaching competence. The subjects of this study were students of the faculty of teaching and education about 16 students. To achieve the objectives of this research, mix method with the exploratory sequential was adopted. This research consists of qualitative and quantitative with the pre-experimental design. The qualitative data were analyzed by data collection, data reduction, data display and conclusion. While the quantitative data were analyzed by using the application of Statistical Product and Service Solution (SPSS) version 21. The qualitative finding showed that the students online teaching competence was very low both of competence in designing lesson plan and online teaching practice before they followed the virtual training. The quantitative finding showed that the virtual training has the significant effect to improve the students where the significant designing lesson plan value (2-tailed) is $0.00 < 0.5$ and online teaching competence value (2-tailed) is $0.00 < 0.05$. Thus, virtual training can improve the students online teaching competence in the English education study program at the University of Riau Island Indonesia.

Keywords: Competence, Improve, Online Learning, Virtual Training



1. Introduction

Teacher competence is the ability of teachers to perform their self to do the main tasks in a procedural way to achieve educational goals institutionally and nationally. Based on the law number 20 of 2003 mentioned that the main tasks of the teachers in Indonesia consist of 3 parts, designing the learning preparations, teaching practice by applying the relevant strategy and method, and evaluating learning process. To achieve results of the learning process based on the goals stated before effectively, teachers are required have the high competence and professional in doing their tasks regularly. According to Siri et al (2020) competent teachers are they have strong knowledge about the field of study being taught, has the right attitude about oneself, school, peers, and the field of study fostered, has good skills in teaching techniques actually in implementing strategy and learning method, and mastering the education technology used. This is in line with Abusomwan and Osaigbovo (2020) define that the teacher competencies include the ability to use learning methods and strategies, effective classroom management, motivating skills, evaluation strategies, preparation of learning plans and the effective use of teaching materials. In this case the teachers' ability to organize online and non-online learning need to be comprehended.

Improving teacher competence must be a serious priority in conducting online learning at this time due to the impact of the Covid-19 pandemic which has stopped the face-to-face learning process from being online (Nic Beech, 2020). Plans, systems and learning processes undergo a total change (Jacob et al, 2021) and these changes have an impact on policy making, parents, students and educational institutions. The changing of the learning system occurs in the learning process from traditional classroom-based teaching to the virtual learning approaches (Mseleku, 2020). This condition has caused some serious problem where the learning process could not run effectively in all countries, especially in Indonesia. The research of Tarkar's (2020) showed that parents are not proficient in using online learning technology to accompany their children to take part in online learning. Furthermore, Napitupulu (2020) revealed that 63% of students in Indonesia could not participate in online learning because of the low ability of teachers to master online learning technology so that the learning process was dominant by giving assignments to students. This information was in line with the research results of Mursalin, et al (2021) that 42.22% of teachers were not ready for online learning because teachers have low competence (Egert, Dederer, & Fukkink, 2020).

The problems mentioned above indicated that all components of education need to participate to offer the effective and efficient solutions. In this case, universities in the field of education should be contributed to preparing student as the teacher candidates who have competencies which relevant to the needs of the current learning system today. By understanding the urgency of the problems stated above, the researcher contributed through this research with the title Virtualization of Teacher Training on Improving of Online Teaching Competence for the Students of Riau Island University In Indonesia. This training aimed to improve the students' competence in online teaching needs to be carried out to equip students with the skills to use technology in online learning.

1.2. Literature Review

Teachers' Competence

Based on the Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers, competence is a set of knowledge, skills, and behaviors that must be possessed,

internalized, and controlled by a teacher or lecturer who carries out his professional duties. Competence is a person's ability to carry out their main tasks effectively in accordance with his field (Qomariah, 2020). This is in line with Sunyoto (2015) defines competence is the skill to do their duties related to their field and expertise. It is also can be interpreted that teachers' competence is the ability of a teacher to do his main duties in accordance with his field of expertise. In this case, the main task of the teacher consists of the ability to design lesson plans, teaching in the classroom, and evaluate student learning outcomes.

Rabo (2018) classified several characteristics of competent teachers such as a) having goals and intentions to develop students' thinking skills and effective nature. b) individualize and meet the individual needs of students. c) provide positive treatment to students and create a pleasant learning environment. d) love children and respect every child. e) professionalism and organization of daily work and use of time wisely. f) be responsible for their work, contribute to the school, parents, and society. g) has a good personality, show work ethic, humorous, and creative. h) responsive to change, showing initiative and positive attitude towards change. g) able to complete tasks on time if trusted. h) able to maintain the ethical purposes of the profession as a teacher, both in the school environment and in the community.

Zulfakar (2020) defines that the requirements to become a competent teacher: a) has a comprehensive knowledge base, have critical intellectuality, and work for the interests and progress of their students. b) can establish good relations with students and teach new things to students. c) able to create a conducive learning environment, an open environment that can encourage students to apply different learning models. d) act as a researcher in the field of education. Actively involved, have a critical attitude towards education, teaching, and learning, competent in conducting research, open to innovative ideas and approaches, enhance self-capacity and learning process. e) able to adapt in personal and group interactions. f) able to carry out activities in one theme or various other activities.

Teacher competence must be improved continuously to create the meaningful learning process and quality of the school graduates. The importance of teacher competence increased because it can be affected their values, behavior, communication, goals, and effective teaching practices (Parker, 2018). Mustikawati et al (2020) state that teacher competence can be improved through formal education, training, and teacher involvement in some teacher communities. Furthermore, Madjida (2020) teacher competence can also be increased through seminars, courses, and mentoring regularly. Continuing education to a higher level is the first step to improve teacher competence. Several research results reveal that continuing education to a higher level can increase teacher competence Egert et al (2020). Teacher competence can also be improved through regular training. The results of empirical studies show that attending training can improve teacher knowledge, teacher competence, and teacher performance outcomes (Slameto et al., 2017), (Qomariah, 2020), and (Pohan et al., 2021).

Online Training

One of the efforts that can be implemented to improve teacher competence is hold the training which regularly followed by teachers, in this case through online training. Hasan Basri, et al (2015) suggested that the training objectives consist of three, namely: a) Cognitive domain, which means that the purpose of the training is to increase the knowledge of the trainees. b) Affective domain, which means that the purpose of the training is to improve the behavior and character of teachers as trainees. c) Psychomotor domain, which means that the purpose of the

training is to improve the skills of teachers in teaching. From the information above, it can be concluded that the purpose of the training is to increase the mastery of science according to the field, the attitudes and skills of the trainee teachers. Online training is the training which carried out in a network assisted by internet access services. Online training can be done through e-learning platforms, websites, word press, and other platforms. Online training is very useful for teachers to adopt specific skills needed in class to teach the students. After all, education should not be completely equal with training, and the role of professional teachers is to explain the educational process, and analyze it in relation to the reasons, and needs why certain learning experiences are beneficial. (Sue S., et al. 2020).

The results of previous empirical studies showed that the online and offline training have significant effect on increasing teacher competence. The results of the research by Pohan, et al (2021) showed that online training has successfully to improve the competence of teachers in the outer regions of Indonesia. Teachers could attend training flexibly without leaving the workplace and without high payment. This finding was in line with the research results of Mustikawati et al (2020) revealed that virtual training could improve teachers' competence in learning and increasing teachers' competence. The results of the research by Pratama et al (2020) virtual training also could improve the pedagogical competence of teachers, especially skills in teaching.

2. Research Method

The research method used in this research is the Mixed Method research method. The Mixed Method research method is a research method which combines quantitative and qualitative methods (Sugiyono, 2019). Furthermore, Creswell (2009) explains that combined research methods will be useful when quantitative methods or qualitative methods alone are not accurate enough to be used to understand research problems, or using qualitative and quantitative methods in combination can get the best understanding (when compared to one method). The mixed method research model which applied in this study was a sequential exploratory model. The sequential exploratory model is a method that combines qualitative and quantitative research methods sequentially, where in the first stage it uses qualitative methods and in the second it uses quantitative methods (Sugiyono, 2019).

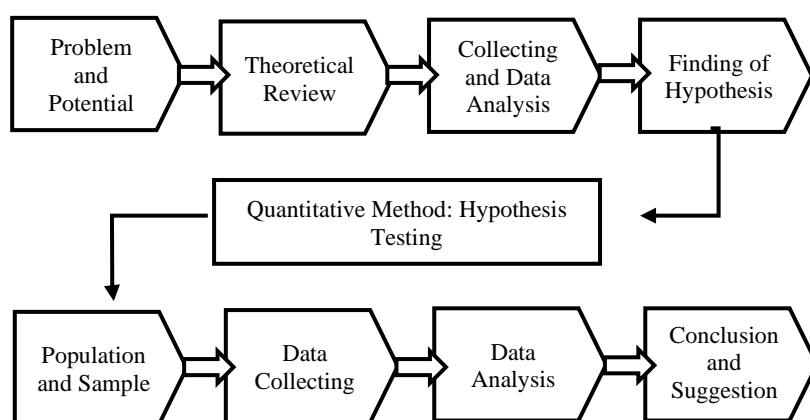


Figure 3.1 Sequential Exploratory Design (Sugiyono, 2019)

This research was conducted at the University of Riau Island, Batam City, at English Education Study Program in the fifth Semester of the 2020-2021 academic year. The informants of this study were the students of fifth semester, lecturers of English education study program, and head of the English education study program. In qualitative research, data collection activities, data analysis, and data credibility testing were carried out simultaneously in the field. Data collection was carried out through documentation studies and in-depth interviews and testing of research data was carried out using triangulation techniques. The data analyzed refers to the Miles & Huberman model which consists of data collection, data reduction, data display, and conclusion.

In quantitative research, the researcher used pre-experimental research method with a One-group pretest-posttest design. The subjects of this study were the fifth semester students of the English education study program with the total of 16 students. The first data collection technique was done through a pre-test, namely scoring the designing lesson plans and online teaching practices. Furthermore, the researchers provided online training for eight meetings through the zoom meeting platform. Next, the researcher gave a post-test exam through writing lesson plans and online teaching practice. The results of this study were analyzed by using the application of Statistical Product and Service Solution (SPSS) version 21 to determine the results of the homogeneity test, normality test, and hypothesis testing and to present the results in the form of tables. The data analysis of this study was explained if the post-test value (O_2) > pre-test value (O_1) then the hypothesis is accepted. This means that virtual training can improve teacher competence in designing lesson plans and online teaching practice.

3. Result and Discussion

Qualitative Result

The findings of qualitative research indicate that the competence of students participating in virtual training as teacher candidates was still low category. However, it has increased after participating in virtual training. As stated above, the competencies described in this study were the ability to teach student virtually, which consists of the competence to design the planning of the learning implementation and the competence to teach students virtually. The learning implementation plan was an arrangement and description of learning activities that should be applied in the learning process in the classroom (Pohan, 2020). The components of the learning implementation plan consist of basic competencies and indicators of mastery achievement, learning objectives, strategies and methods, teaching materials and sources, learning tools and media, learning activities consisting of opening, implementation, and closing, learning instruments consisting of attitude assessment, knowledge, and skills, and principal validation. However, based on the policy of Merdeka Belajar curriculum 2020 version, the learning implementation plan component only consists of 3 components, namely learning objectives, learning activities consisting of opening, implementation, and closing, learning instruments consisting of attitude, knowledge, and skill assessments. The type of lesson plan analyzed in this study was a lesson plan based on the policy of Merdeka Belajar curriculum 2020 version.

Online teaching competence is the ability of teachers to prepare relevant and applicable teaching materials, the competence to explain the lesson materials communicatively and

involve students in the learning process actively with various strategies and learning methods, so that learning objectives can be achieved optimally. Online teaching competence required more practice and preparation compared to create the pleasant and normal learning situation. Competence can be developed through training process by experiencing it directly or by learning according to the individual characteristics of the teacher (Minh Gian, et al, 2021). Online teaching competencies consist of the ability to open learning, conduct learning that actively involves students, explain teaching materials effectively, master teaching materials, respond to student questions, provide feedback, create an interesting learning atmosphere, and be able to communicate well with students, and measuring student learning outcomes (Pohan, 2020).

Based on document studies, observations and interviews with virtual trainees, the findings of this qualitative research can be described. Firstly, the ability of virtual training participants in compiling online learning plans has not yet reached the standard indicated by an average score of 63.06. The training participants did not understand the essence of the lesson plan based on the policy of Merdeka Belajar curriculum 2020 version because this concept was still new and had not been studied. The curriculum studied in learning and learning lectures is the 2013 curriculum where these two curricula have many differences. The curriculum changing have given the impact that the teachers and prospective teachers not mastering the concepts and principles of planning the implementation of the curriculum. The trainees have difficulty in developing the steps of learning activities that will be applied in online learning

Secondly, the ability of the trainees in virtual teaching practice has not yet reached the standard of indicator. The low ability of virtual teaching practice was evidenced by the results of a document study where the average value of the trainees was 53.5. Through observation activities, it was found that the training participants had not mastered the operation of the online learning platform effectively. Online learning has not been implemented effectively because the implementation of learning does not reflect the activities arranged in the lesson plan. Students have not been actively guided to be involved in online learning. Another cause of ineffective online learning was internet network problems experienced by students. Students could not fully understand the material taught by them because the internet was disconnected. So that the learning outcomes have not run effectively. This finding was in line with the results research of Napitupulu (2020) where the students could not take online learning because of the low mastery of teacher technology. This finding was the main reason for continuing quantitative research by applying pre-experimental methods to overcome online learning problems faced by virtual trainees.

Quantitative Result

The results of the quantitative study were obtained from the results of the lesson plan assessment compiled by the trainees and the results of the online teaching ability assessment before and after participating in the virtual training. For more detailed information can be seen to the table 1 below.

Table 1. Result of Pre-Test dan Post-Test

Indicators	Result			
	Designing Lesson Plan		Online Teaching Competence	
	Pre-Test	Post-Test	Pre-Test	Post-Test
Total value	1009	1330	856	1259
Average score	63.06	83.12	53.5	78.68
Highest score	83	90	70	84
Lowest score	50	75	20	86
Median	61	85	56	78
Modus	50	90	52	76

Table 1 above shows that the average value of the ability to prepare lesson plans before participating in virtual training is 63.06 and after participating in virtual training is 83.12. While the average value of online teaching skills before participating in the training was 53.5 and 78.68 after participating in the training. These results indicate that there is an increase in the competence of virtual training participants in preparing lesson plans by 20.06% and in the aspect of online teaching competence there is an increase of 25.18%.

Normality Testing

The normality test was carried out by using SPSS analysis using the One-Sample Kolmogorov-Smirnov Test. The decision making in this test is if the significance value (Sig.) were bigger than 0.05, the research data were normally distributed. Meanwhile, if the significance value (Sig.) were smaller than 0.05, the research data were not normally distributed. Below are the results of the One-Sample Kolmogorov-Smirnov Test for normality.

Table 2. One-Sample Kolmogorov-Smirnov Test

Designing Of Lesson Plan			Online Teaching Competence		
		Unstandard. Residual			Unstandard. Residual
N		16	N		16
Normal Parameters ^{a,b}	Mean	0E-7	Normal Parameters ^{a,b}	Mean	0E-7
	Std. Deviation	5.12782511		Std. Deviation	4.46657231
Most Extreme Differences	Absolute	.170	Most Extreme Differences	Absolute	.133
	Positive	.155		Positive	.133
	Negative	-.170		Negative	-.077
Kolmogorov-Smirnov Z		.679	Kolmogorov-Smirnov Z		.532
Asymp. Sig. (2-tailed)		.745	Asymp. Sig. (2-tailed)		.940

Based on table 2 above, it can be seen that the results of the normality test with the One-Sample Kolmogorov-Smirnov test can be described as normal. The table shows that the significance value for designing of lesson plan is $0.745 > 0.05$, and for online teaching competence is $0.940 > 0.05$ it can be concluded that the residual values are normally distributed.

Hypothesis Testing

This hypothesis test used the Paired Simple t-test to determine whether the application of virtual training could improve trainees' online teaching competence at University of Riau

Kepulauan. The basic of decision making was if the significance value (2-tailed) < 0.05 then there was a significant difference between the pre-test and post-test scores. And if the significance value (2-tailed) > 0.05 then there was no significant difference between the pre-test and post-test scores. Below are the results of the hypothesis test.

Table 3. The Result of Hypothesis Testing by Paired Simple t-test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PretestLP - PosttestLP	-20.063	9.483	2.371	-25.116	-15.009	8.462	15	.000
Pair 2	PretestTOC - PosttestTOC	-25.188	11.385	2.846	-31.254	-19.121	8.849	15	.000

Based on the results of the hypothesis test in table 3 above, it can be seen that there is a significant difference between the pre-test and post-test scores both of trainees' competence in designing lesson plan and teaching online after participating in virtual training. This is indicated by the results of the Paired Simple t-test where the significance designing lesson plan value (2-tailed) is $0.00 < 0.05$ and the significance online teaching competence value (2-tailed) is $0.00 < 0.05$. In accordance with the basis for the conclusion above, it can be concluded that virtual training has given the effect on improving trainees' online teaching competence at University of Riau Kepulauan.

Discussion

This research was conducted in order to measure the effect of the virtual training to improve the students online teaching competence. The results of qualitative research indicate that the competence of students participating in virtual training as teacher candidates was still low category. However, it has increased after participating in virtual training. As stated above, the competencies described in this study were the teachers' competence in online teaching practice, which consists of the ability to prepare a learning implementation plan and the ability to teach the student in online. The learning implementation plan was an arrangement and description of learning activities that will be applied in the learning process in the classroom and in the practice room (Pohan, 2020). One of the competence of technician referred to the ability of preparing the lesson plan in accordance with the provisions of independent learning. The ability to arrange learning administration was a characteristic of professional teachers (Gutierrez, 2020) and then applied it to improve student competence (Stemberger, 2020), and measured the results of student learning progress (De Simone, 2020).

The ability of students in preparing lesson plans increased after participating in virtual training. Through this virtual training, students were able to understand the structure and components of a lesson plan. Students were guided to develop learning objectives in the

lesson plan based on Bloom's taxonomy. In the learning objectives, students were guided to develop goals to be achieved from the aspect of knowledge according to the teaching material, skills that must be mastered after participating in learning, and the internalization of national character values such as religious, nationalist, mutual cooperation, independent, and integrity characters. Furthermore, the training participants were guided to develop learning activities based on the syntax of learning strategies or learning methods to achieve the formulated learning objectives. Training participants were also guided to develop learning instruments to measure student learning outcomes which consist of aspects of attitudes, knowledge, and skills.

The ability to prepare lesson plans needs to be mastered by prospective teacher students because this work was one of the main obligations of teachers. The ability to develop lesson plans affects the effectiveness of learning in the teaching and learning process. Through lesson plans, teachers were required to know where the learning process started from, knowing what students must achieve in learning, knowing how to teach students so that students were able to achieve learning targets and objectives, knowing what strategies and methods should be used to achieve learning objectives, and knowing what to measure and what measuring instruments to use. Thus, the learning process will take place effectively where students can play an active role in the learning process. The success of students in achieving learning objectives could not be separated from the role of the teacher. For this reason, teachers must prepare for learning carefully before starting the learning process so that the learning process can take place effectively.

Teacher competence could be improved through several efforts, one of the proven efforts was through training. This was in line with teachers (Slameto et al., 2017), (Qomariah, 2020), and (Pohan et al., 2021) stated that teacher competence could be improved through regular training in order to improve teacher knowledge, teacher competence, outcomes, and teacher performance. In this virtual training, students were guided intensely on how to organize online learning by utilizing various online platforms. The trainees were trained how to open and close online classes in a communicative manner which consisted of several activities such as literacy activities, character development, and brain storming to focus students on learning. According to Sukirman (2012), opening and closing learning is an activity carried out in a structured manner in learning according to the plans drawn up in the lesson plan. Opening learning is the first effort that teachers must make in learning activities to create student preconditions so that students can focus and know what will be learned and what must be achieved in learning.

Students of Riau Islands University in the English Education Study Program as participants of this virtual training were trained to master class management skills well. Class management skills can be interpreted as teacher skills to create and optimize the learning conditions (Pohan et al, 2020), both in face-to-face learning and online learning. Participants were repeatedly trained how to explain learning objectives and teaching materials effectively in online learning so that students could understand what the teacher explained. This was in line with Arikunto (2006) states that the purpose of classroom management is to discipline students so that students can follow the learning process with focus. Sharpen the ability and skills of asking students, building polite communication, and managing the class effectively so that students are actively involved in learning.

Particularly, the trainees were trained to improve skills in using online learning media, the ability to provide reinforcement and the ability to implement relevant learning methods. Mastering the use of media in online learning is important because the purpose of using media was to concrete concepts that are still abstract, for example by using pictures, schematics, graphs, and models so that students can more easily understand teaching materials. Optimized of the using of learning media can improve the function of students' senses so that the weakness of one sense can be balanced with the strength of the other senses. Provided the skills for training participants how to provide reinforcement to students in the learning process. Reinforcement is a response to a behavior that can allow the repetition of that positive behavior (Pohan, et al, 2020). Through the provision of reinforcement, it can increase students' attention in learning, maintain motivation, and control students to encourage positive behavior.

The findings of qualitative research have provided a clear illustration of student competence in teaching online. The results of qualitative research were followed up with quantitative research with pre-experimental models to help solve problems faced by students at the Riau Islands University in the English Education Study Program. Based on the results of statistical analysis that the ability to prepare lesson plans and the ability to teach online increased where the significant value (2-tailed) was $0.00 < 0.05$. This means virtual training in the ability to compose lesson plans and the ability to teach online. There were several reasons virtual training could increase the student's ability in designing of lesson plan and online teaching practice, such as collaboration among the students, flexibility of training time, face-to-face online communication and enthusiasm of training participants. This is in line with the results of research conducted by (Sue S., et al. 2020., Mustikawati, et al., 2020., & Pratama, et al., 2020).

4. Conclusions and Suggestions

4.1. Conclusions

Based on the above discussion, the results of this research can be concluded that the virtual training conducted by researchers can improve the students' competence in designing lesson plan by the value (2-tailed) is $0.00 < 0.05$ and the students' online teaching competence by the value (2-tailed) is $0.00 < 0.05$. In accordance with the basis for the conclusion above, it can be concluded that virtual training has given the effect on improving students' online teaching competence at Riau Islands University in the English Education Study Program.

4.2. Suggestions

Based on the research conclusions above, the researcher can provide suggestions to researchers, teachers, and school principals in order to:

- 1) Implementing the virtual training to improve the students' online teaching competence.
- 2) Conducting similar research with different or the same variables to improving students' online teaching competence.
- 3) Conducting the same research with different variables in other university to improve the students' online teaching competence.
- 4) Providing equitable training by virtual training to the students and teachers in improving the students and teachers' online teaching competence.

5) Follow up on the results and realization of virtual training continuously, evaluate, and reorganizing to ensure the effectiveness of the next virtual training in improving the students and teachers' online teaching competence.

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