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Examining Technology Integration in Micro Teaching: Unique Insights from Pre-Service Teachers at Universitas Widya Gama Mahakam Samarinda Using the Harris, Grandgenett, and Hofer Framework

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Sukaena[1], Effendi Limbong[2], Desy Rusmawaty[3]

Universitas Widya Gama Mahakam Samarinda[1], Indonesia
Universitas Mulawarman[2,3], Indonesia

sukena@uwgm.ac.id [1], limbong_efflin@yahoo.com[2], desyrusmawaty@fkip.unmul.ac.id[3]

Correspondence author Email: sukena@uwgm.ac.id

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Abstract

The objective of the study was to know the categories of Harris J., Grandgenett, N., and Hofer M toward preservice teachers in Micro Teaching Course at Widya Gama Mahakam Samarinda University. This study was conducted at fifth semester of English Education Department, University of Widya Gama Mahakam Samarinda. This study focused on technology integration of pre service teachers that implemented in micro teaching course. Design of this study was qualitative study. There were 24 pre-service teachers in this study determined by purposive sampling. The instrument used was interview guide by Harris J., Grandgenett, N., and Hofer M. There were 5 pre-service teachers who were willing to be the interviewees. Then, the researcher collected the data by simulated recall interview and video as the source of data. The result of the study showed pre service teachers were good enough in implementing technology integration in their micro teaching course. There were four categories seemed in this study. They were about curriculum goals, instructional strategy, technology selection, and fit. Researchers conclude that all the categories were fit together in a harmony although some of preservice teachers still using low technology in their practice.

Keywords: technology integration, micro teaching, preservice students,

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1. Introduction

Teachers who chose to integrate technology into their classrooms face the difficult task of keeping up with rapidly changing technology and confront a seemingly endless cycle of learning and relearning technology (Koehler and Mishra, 2008). In 21th century, teacher should be able to use technology in teaching. There is an alternative approach in which teachers with

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'deep knowledge' create their own technological solutions, as needed, and tailor them to meet their curricular and pedagogical needs. This idea of teachers as designers (Koehler and Mishra, 2008) is important because most technologies are not designed for educational purposes (Mishra et al., 2009). In order to do that, teachers need special knowledge of their subject matter, pedagogical approaches, and, of course, the technology. Teachers must also create their creativity, find new ways of looking at educational technology, be willing to play with technologies and ideas, and be open to constructing new experiences for students. In doing so, teachers could leverage technologies to become educational technologies, and better serve students by paying attention to deeper and more enduring ideas of teaching.

TPACK framework (Koehler and Mishra, 2008; Mishra and Koehler, 2006) with its emphasis on the integration of three forms of knowledge: content, pedagogy and technology, as being the core knowledge that all teachers need to have in order to effectively integrate technology in their teaching. Having TPACK is necessary but not sufficient for teachers to become creative or innovative in their thinking about using technology for pedagogical purposes. Teacher educators, or those involved in teacher professional development, needed to develop techniques that enable educators to explore the technology in rich contexts that allowed for the creative interplay of technology, pedagogy, and content. The TPACK framework builds on Shulman's construct of pedagogical content knowledge (PCK) referring to "the most powerful analogies, illustrations, examples, and demonstrations – in a word, the ways of representing and formulating the subject that makes it comprehensible to others". The TPACK framework consists of three main components of knowledge, i.e., content (CK), pedagogy (PK) and technology (TK) and their intersections represented as pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK) and TPACK.

Pre service teachers can implement TPACK when they did their micro teaching class. Microteaching method had benefited in many countries to train teachers. Microteaching prepares pre service teachers both for teaching practice and teacher ship. The attitudes of the

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preservice teachers were again and again analyzed through microteaching practices, and thus it gave a chance to discuss and find out what the problems were, what causes them and what the solution is (Erokten & Durkan, 2009). In a more general sense, it was a practical method which provides teaching skills as an outcome of which a chance for analysis is created microteaching method contributes a lot to pre service teachers in terms of TPACK development. It includes some practices and theories about how a subject could be better taught through different strategies, methods and techniques, how this could be made more understandable for students and how this could be developed for better realization of students.

Micro teaching was very important to train pre service teachers before they teached as a professional teacher. In line with it, they needed to learn and understand the way in using technology for teaching. Pre service teachers in Faculty of Teacher Training and Education got a subject about Technology-enhanced Language learning. They got the subject in fourth semester before getting micro teaching class. So, pre service teachers could implement their knowledge of technology in micro teaching class then.

2. Method

2.1. Research Design

In this study, the research used case study. It aimed to know the categories of technology integration by Harris J., Grandgenett, N., and Hofer M toward pre service teachers in Micro Teaching Course at Widya Gama Mahakam Samarinda University. Baxter & Jack (2008) stated that the qualitative case study was an approach to research that facilitates exploration of phenomenon within its context using a variety of data sources.

2.2 Research Subject

This study conducted at Fifth Semester of English Education Department of Widya Gama Mahakam Samarinda University. There were 24 pre service teachers in the class. Researcher chooses the subjects by purposive sampling, which it is one of technique to choose subject of qualitative research. In term, Creswell (2012) marked that purposeful sampling is the term used for qualitative sampling. Selected the sample was an important step in conducting

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a research study. Purposive sampling could be interpreted as intentional sampling. Fraenkel, Wallen & Hyun (2012) stated that they typical sample is considered or selected to be typical or representative of that which is being studied. Based on the pre service situation which busy with their apprenticeship, there were only 5 pre services teachers were willing to participate and to be interviewed.

2.3 Research Instruments

Gay and Airisian (2000) stated that instrument is a tool that is used in collecting data. In this case, the instrument used was interview guide. In addition, video recorded used as a source of data research. Hence, The researcher would be the key instrument of this study. Interview was an important way to check the accuracy to verify or refute the impressions of the researchers has obtained (Fraenkel, Wallen, & Hyun, 2012). So, the interview questions would be adapted & modified based on studies from Harris, J., Grandgenett, N., & Hofer, M. (2012).

2.4 Data Collection Procedures

In collecting the data, researcher needed to ask permission to the lecturer of micro teaching class. After getting permission, researcher sat down in the class and observed the situation in the class. Researcher let the lecturer to start the class in every meeting as usual. Each student did their micro teaching practice for 10 to 15 minutes. Before they did the practice, they collected their lesson plan to the lecturer. Researcher recorded students' performance during the allocated time. By using the video recorded, researcher used Stimulated recall interview (SRI). In the SRI, pre service teachers watched videos of their teaching practices and were asked to discuss their decision-making processes as they carried out their teaching roles. The purpose of using SRI in this study was to gain insight into why the participants chose to act/teach in certain ways (Calderhead, 1981; Dempsey, 2010; Lyle, 2003; Macrland, 1984; O'Brien, 1993; Vesterinen, Toom, & Patrikainen, 2010). Before did the interview, researcher sent the video recorded to the subject. After they watched the video, then researcher did

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interview by zoom application one by one in different time. Researcher used zoom application because avoid to meet them directly because of Pandemic situation.

2.5 Data Analysis Technique

Data were analyzed using the Technology Integration Observation Instrument, which focuses on 'the use of technology integration' in the lesson. The instrument was developed by Harris, Grandgenett, and Hofer (2010) and its aim was stated as assessing "the quality technology integration in an observed lesson". In the instrument, there are several categories rated using 4 point-scale each point having specific explanations. The categories are as follows: (1) Curriculum goals and technologies; (2) instructional strategies and technologies; (3) technology selection(s); and (4) fit. Each category receives a score from 1 to 4, with specific explanations. For example, a lesson receiving the rating of 4 for the category of "curriculum goals and technologies" means that "technologies used in the lesson are strongly aligned with one or more curriculum goals.

3. Findings

3.1. First Category about Curriculum Goals and Technology

There were five subject of this study and four of them choose junior high school level as participant for their micro teaching practice in the class. First subject chooses Ninth Grade of Junior High School. The topic is about Asking and Expressing Certainty. There were three point of learning objectives or curriculum goals of the lesson as below:

1. The first one is accustomed to use English in expressing and asking for certainty.
2. Students can express a statement of certainty about something.
3. Students know how to express certainty and express certainty to others.

Second subject did her micro teaching practice in Seventh Grade of Junior High School. The objectives of the study were to make the students know how to start conversations and end conversations in and out of class. The lesson was about greeting and left taking. Next subjects choose Eight Grade at junior high school as the students for her micro teaching practice. The

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lesson was about expressing like and dislike. The objective of this lesson was to make students understand word like and dislike.

Fourth subject choose seventh grade students of junior high school as a participants for her micro teaching practice. The topic was about asking and giving permission. Learning objectives was to teach students how to ask and giving permission politely. And the last subject did her micro teaching practice in first grade of Senior High School. The topic was about describing. Learning objective was to introduce students about describing something around them. At the beginning of the lesson, Cesa did not mention the learning objective, but she asked students to sing an English song for making group. When they are singing, Cesa lead them and said "stop" when the number of students enough for one group. After that, the song continued until the last students in the class.

Four of them used power point and printed paper as media for teaching. One pre service teacher used powtoon video that she downloaded from youtube. For additional explanation, they also explained the lesson in white board. They got the material from internet and teacher hand book. They explained the lesson used power point and then gave printed paper to the students to make short conversation in peers and also in a group. For first category, researcher could say curriculum goals matched with technology used in pre service teacher's micro teaching practice.

3.2 Second Category about Instructional Strategies and Technology

The second category was the match between instructional strategies and technology. In the process of teaching and learning, students ask to work in pair for making conversation to develop the lesson which was taught by pre service teachers. The students wrote it down in a paper and read it in front of the class. Beside using power point, pre service teachers also used printed picture that would be given to the students. They combine power point and printed picture was a good idea. The explanation of material was power point and in the white board then students practice by using printed picture.

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Other lesson, teacher showed conversation video by powtoon. After that, all students practiced the conversation together. Next, teachers asked students to make short conversation about greeting and left taking in pairs. It means, in this lesson, students involved to participate actively. For all of the activities above, researcher could say that technology used support the instructional strategy.

3.3 Third Category about Technology Selection

The third category referred to technology selection of the teacher. One of Pre service teacher was smart in selecting video. The students were junior high school so it must be attractive media and interested. Used animation or video was good idea to make students pay attention to the lesson.

Another pre service teacher used basic power point. Actually, for junior high school, it must be use video, game, or animations in the slide so the students would pay attention to the lesson and teacher's explanation. However, printed paper that was cartoon picture made students happy to do conversation practice in the class. Moreover, they had practice in groups. The teacher explained material by power point and after that asked the students to do some exercises text based on the printed picture they got from teacher. In the end, the group presented their task in front of the class. It made them easier in understand the topic of the lesson given.

3.4 Fourth Category was "Fit"

The fourth category was about "fit" among three knowledge components: content, pedagogy, and technology. The content of the lesson was good and accepted well by students. All categories have been applied in harmony. So, in this category, researcher could say content, instructional strategies and technology fit together strongly within the instructional plan.

4. Discussion

The result of interview by using Stimulated Recall Interview to see the experiences of pre-service teachers in preparing their teaching media and also their experiences in implementing technology integration in micro teaching course. The researcher found that pre services teachers' preparation was about only several days or one week. It started by searching

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the material and made the power point. From 5 pre-service teachers who have been interviewed, there was pre-service teacher made the power point in one night before she performed. One of them was very confused whether she chooses the lesson in junior high school or senior high school.

Researcher seemed that, pre-service teachers were good enough preparation in material although in their teaching media still minimal in technology. Because most of them were using basic power point and then printed paper as a media. And for the power point, there were not animation given even they taught at junior high school. Pre-service teachers should master technology. It can help make complex subject matter ideas more accessible to students, because the integration of technology changes the teaching as well learning experience, and because with technology specific concepts and topics of a subject matters become easier to master by students (Chien, Chang, Yeh, & Chang, 2012; Rilling, Dahlman, Dodson, Boyles, & Pazvant, 2005). The strategy to combine the subject matter with pedagogical and technological knowledge is essential to the success of the teaching and learning process (Koehler et al., 2007).

Data from interview showed that most of pre-service teachers still used power point combine with printed picture or material. There was pre-service teacher who used powtoon video but she did not make it by herself, she took the video from Youtube and then explained her lesson by the video. For curriculum goals, each pre-services teachers could mention their curriculum goals or learning objectives clearly. The technology used was aligned with the curriculum goals. It can be seen from their micro teaching video.

Before pre-service teachers did their practice in micro teaching course, they had gotten Technology-enhanced Language Learning course at fourth semester. In this course, the students were taught how to use technology in teaching. They also were taught to make a comic as a media for teaching English. However, some subjects of this study said that most of their activity in this course searched some articles or journals related to technology used in teaching and learning process. Furthermore, pre-service teachers enjoyed the course because they got knowledge about technology for teaching and learning English although they could not applied

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it in micro teaching course. Further, Technology training has become an important component of many teacher training programs to ensure that aspiring teachers are well prepared to use technology in their teaching (Gülbahar, 2008; Batane and Ngwako, 2017).

Researcher also found that pre-services teachers got more knowledge through micro teaching course. They could see their friends' performance and also they practice by themselves for about 15 minutes. They learned how to prepare material and how to explain it to the students in the class. They learned how to use technology in the class. After performing, they also got comment or feedback from lecturer, and it was very useful for them as evaluation so they could develop and improve their performance when they do real teaching practice in the classroom at school later. This means that someone participating in a micro-teaching session can get feedback on specific techniques they are interested in exploring. In line with Vare (1993) In a pre-service or training situation, participants can practice a newly learned technique in isolation rather than working that technique into an entire lesson. Micro-teaching is also an opportunity to experiment with new teaching techniques. Rather than trying something new with a real class, micro-teaching can be a laboratory to experiment and receive feedback.

5. Conclusion

Based on the findings and discussion in previous chapter, researcher conclude that Technology Integration Observation Assessment by Harris, Grandgenett, and Hofer of pre-service teachers at fifth semester in Universitas Widya Gama Mahakam Samarinda were good and fit all together in harmony. Mostly pre-service teachers used power point and printed paper as media in their micro teaching course. However, they can explain and manage the class very well. The students can understand what they teach and follow the instruction that is given by teacher.

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==========

References

Baxter, P. & Jack , S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, 13 (4)

Billen, Kadir. (2015). Effect of micro teaching technique on teacher candidates' beliefs regarding mathematics teaching. Akdeniz University, Alanya Faculty of Education, Department of Elementary Education, Alanya, Antalya, Turkey

Chien, Y.-T., Chang, C.-Y., Yeh, T.-K., & Chang, K.-E. (2012). Engaging Pre-service Science Teachers to Act as Active Designers of Technology Integration: A MAGDAIRE Framework. *Teaching and Teacher Education, 28*, 578-588. doi: 10.106/j.tate.2011.12.005

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to Design and Evaluate Research in Education.* New York: McGraw-Hill.

Gay, L. R., Mills, G. E., & Airasian, P. W. (2011). *Educational Research: Competencies for Analysis and Applications* (10 ed.). United States: Pearson Education, Inc.

Harris, J., Koehler, M., Koehler, M. J., & Mishra, P. (2009). What Is Technological Pedagogical Content Knowledge? *Contemporary Issues in Technology and Teacher Education*. https://doi.org/10.1016/j.compedu.2010.07.009

Harvey, Doglas. M., Caro, Ronald. (2016). Building TPACK in Preservice Teachers Through Explicit Course Design. Association for Educational Communication & Technology. DOI 10.1007/s11528-016-0120-x

Kartal, Tezcan., Ozturk, Nurhan., Ekici, Gulay. (2012). Developing pedagogical content knowledge in preservice science teachers through microteaching lesson study: Ankara, Turkey.

Kurt G., Akyel A., Kocoglu Z., Mishra. *TPACK in practice: A qualitative study on technology integrated lesson planning and implementation of Turkish pre-service teachers of English.* International Association of Research in Foreign Language Education and Applied Linguistics ELT Research Journal 2014, 3(3), 153-166

Koehler M, Mishra P (2008) Introducing TPCK. In: AACTE Committee on Innovation and Technology (ed) Handbook of technological pedagogical content knowledge (TPCK) for educators. Routledge, New York, pp 3–31

Limbong, Effendi. (2016). *Designing and Developing Supplemental Technology of PACI Model Materials through Blended Learning Methods.* A Journal of Culture, English Language, teaching, and Literature: Soegijapranata Catholic University, Indonesia.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis 2nd ed.* United States of America: SAGE publications.

Mishra, P., Koehler, M.J., Bragg, W.H. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge the Advent of Digital Technology has Dramatically Changed routines and practice in most arenas of human work. Advocates of Technology in education often envisage similar dra. *Teacher College Record*, 108(6), 1017-1054.

Borneo Educational Journal (Borju)
https://jurnal.fkip-uwgm.ac.id/index.php/Borju
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==========

Mishra P, Koehler MJ (2007) Technological pedagogical content knowledge (TPCK): confronting the wicked problems of teaching with technology. In: Carlsen R et al (eds) Proceedings of society for information technology and teacher education international conference 2007. AACE, Chesapeake, pp 2214–2226