

EXAMINING PRE-SERVICE TEACHERS' USE OF TECHNOLOGY: IMPLICATIONS FOR CURRICULUM DEVELOPMENT

Sri Wahyuni

Universitas Negeri Semarang

Semarang, Indonesia

sriwahyunifbs@mail.unnes.ac.id.com

Abstract

Technology has been exploited in English educational context to support teachers and learners' instructional activities. In accordance with this, a great number of researches have been carried out to explore teachers' technology use, its models, impacts, supporting factors, and barriers. However, a few is conducted to evaluate technology use and how it implies to revisit the existing curriculum of English education in higher education. The paper, therefore, is an attempt to fill the gap. It intends to examine pre-service teachers' use of technology and its implications for curriculum development. The present study involves 35 pre-service teachers taking part in a two-month internship program in the coordinating schools. To achieve the study aims, the research questions addressed are (1) What types of technology do the pre-service teachers use to facilitate instructional activities?; (2) How does technology support the pre-service teachers' instructional activities?; and (3) How does pre-service teachers' technology use imply English education curriculum development? The study adopted a qualitative descriptive approach with a survey method and the research data were gained through administering a questionnaire. The data were analyzed by means of the data reduction and coding, interpretation, presentation, and reporting. The findings showed that the participants already adopted various types of technology – devices, multimedia, learning platform, social media, and other. Their choice and use of technology seemed to be affected by the institutional characteristics – technology devices provided by the cooperating schools. Besides, it could be influenced by personal characteristics – the pre-service teachers' technology competence and their positive attitude towards technology use in promoting students' learning, enthusiasm, motivation, participation, and engagement. It implied that to prepare the student teachers to better perform in their teaching practicum they should be equipped with more practices on various technology use for instructional purposes.

Keywords: pre-service teachers, technology, teaching practicum, curriculum development

INTRODUCTION

The 21st century education is characterized by use of technology in instructional contexts. Therefore, teachers are expected to transform themselves to be technologically literate. It implies that they have to be able to use technology to facilitate classroom activities. In line with this, teacher education should prepare future teachers with

technology competence in addition to content and pedagogical knowledge. To answer this demand, one of the ways is to integrate technology learning into curriculum. As stated by DiBella, Williams, and Glover (2015) that technology adoption into college courses appears to better prepare pre-service teachers for future teaching practicum. However, the study by Cakir, Yukselturk,

Top (2015) showed that when comparing the attitude towards technology use, the in-service teachers felt more positive about educational technology than those of the pre-service teachers. Similarly, Batane & Ngwako (2017) found that most of the pre-service teachers during their teaching practicum did not use technology in the instructional activities even though they have sufficient technology knowledge and skill. In addition, Moyenga & Usta (2019) revealed that the pre-service teachers' technology skills were considered so moderate in operating basic computer and using productivity software as well as to communicate electronically. Meanwhile, studies by Schmid & Hegelheimer (2014) and Song (2018) uncovered that teaching practice provided pre-service teachers with experiences in using technology which helps promoting their technology skill for instructional activities. It can be inferred that field practice could contribute to student teachers' improvement of technology competence. Therefore, student teachers need to be provided with more practices on technology use in college classes to enhance their confident and positive attitude towards technology adoption so that it would better prepare them for future teaching practicum and teachers.

From the aforementioned previous studies, it can be inferred that pre-service teachers' use of technology and its implication towards curriculum development is still under research especially in Indonesian context. Therefore, the present study is intended to explain (1) types of technology used by pre-service teachers in teaching practicum; (2) how technology supports pre-service teachers' instructional activities; and (3) how pre-service teachers' use of technology

implies English education curriculum development.

As mentioned previously, the study focuses on exploring pre-service teachers' use of technology during their teaching practicum. Richards and Schmidt (2002:416) define pre-service teachers as students taking part in pre-service training as a part of the curriculum program which student teachers have to accomplish before they receive their teacher certificate.

They complete supervised field-based teaching experiences with the support and mentorship of university faculty and K-12 cooperating teachers (Wallace, 1991 in Ragawanti, 2015). Teaching practicum or teaching internship aims at providing opportunities to the pre-service teachers to build up and advance her/his professional practice in the context of a real classroom, usually under some kinds of guidance or supervision. Technology is "the subset of electronic technologies encompassing hardware and software used by individuals for educational, social and/or entertainment purposes in the formal and informal context of their everyday lives" (Wan Ng, 2015:4).

Meanwhile, technology use in this study refers to pre-service teachers' technology use of both hardware and software applications, the Internet connection, offline and online learning resources used during their teaching practicum for EFL instructional purposes. In addition, Pillai states that "curriculum includes a set of subjects, content, a program of studies, a set of materials, a sequence of courses, a set of performance objectives, means of assessment, instructional strategies and school activities that influence present

and future academic, social, emotional, and physical growth of students.”

METHODOLOGY

The present study adopted a descriptive qualitative approach with a survey method. It involved 35 pre-service teachers majoring in English education. They participated in teaching practicum in junior and senior high schools in Central Java and foreign countries. They consisted of 27 (71.1%) females and 8 (22.9%) males. They were distributed into public and private schools as follows: 47% in public junior high school, 14.7% in public senior high school, 8.8% in private junior high school, 20.5% in private senior high school, and 8.8% in international school (Vietnam and Malaysia). A questionnaire was employed to obtain the research data. The four-point Likert scale questionnaire contained questions such as types of devices, multimedia, social media, learning applications, and other types of technology used by the student teacher. Besides, it was also used to explore how the pre-service teachers used those technology and factors affecting their choice and use of technology. Finally, the research data were analyzed by means of data reduction and coding, interpretation, presentation and reporting.

FINDING AND DISCUSSION

As explained previously, the present study focused on examining the pre-service teachers’ use of technology and its implication to the curriculum development. The questionnaire result showed that the pre-service teachers’ use of technology could be categorized into devices, multimedia, learning applications, social media, and others. In terms of devices, arranged from the mostly to the least used there were LCD projector, laptop, speaker, cell phones,

computer, and smart board. The detailed use can be seen in Chart 1. The student teachers used the devices such as laptop as a tool to search for teaching materials and media, design lesson plan, save and process data, and connected to the LCD used to present teaching materials. Cell phones were used as a tool to search for instructional materials, read texts, design mobile learning-based quizzes and present quizzes.

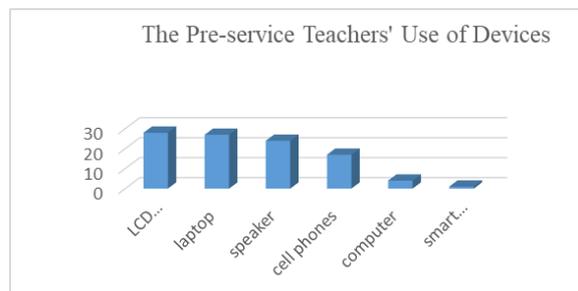


Chart 1 The Pre-service Teachers’ Use of Devices

The second category of technology used was multimedia. Six mostly adopted multimedia were power points, video, pictures, audio, images, and songs. They functioned as a medium which helped the participants deliver the materials. It is presented in Chart 2.

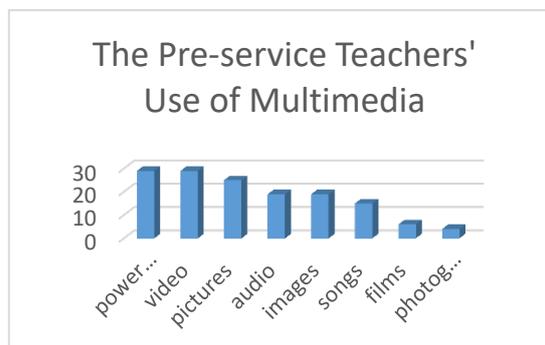


Chart 2 The Pre-service Teachers’ Use of Multimedia

The third category of technology used was learning applications which consisted of Kahoot, Google Classroom, Edmodo, Quizziz, and Socrative. The most popular learning application among the student teachers was Kahoot. This assessment application was used to design and launch quizzes. Other types of assessment tools were Quizziz and Socrative but not yet as popular as Kahoot. Meanwhile, the teachers also used Google Classroom and Edmodo as the learning platform to facilitate the instructional activities. It can be seen in Chart 3.

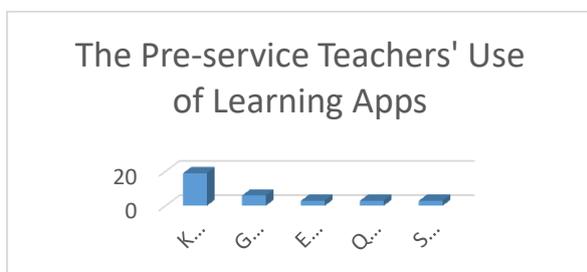


Chart 3 The Pre-service Teachers' Use of Learning Apps

The fourth category of technology used was social media. The mostly popular used social media among the student teachers was WhatsApp, YouTube, Email, and Instagram. As almost everyone was on WhatsApp, it was very practical to use WA to exchange information and to communicate in an academic context. YouTube as a video channel was also mostly accessed to search for learning materials and media. Email was used as a medium for sharing files and submitting assignment. The detailed information can be seen in Chart 4.

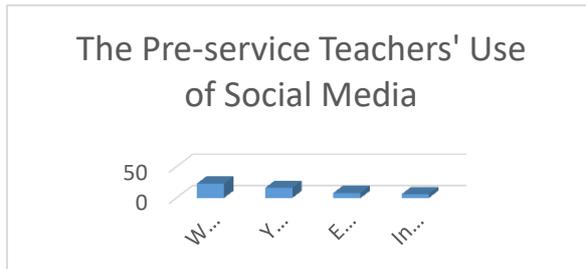


Chart 4 The Pre-service Teachers' Use of Social Media

Lastly, technology used by the student teachers was included in the other type. It contained the Internet and laboratories namely language lab, computer lab, and multimedia lab used as a classroom to substitute the regular class. Almost all participants made use of the Internet for various purposes. Laboratories seemed rarely used for teaching and learning activities nowadays because most classes are equipped with either built-in LCDs or portable ones. It is presented in Chart 5.

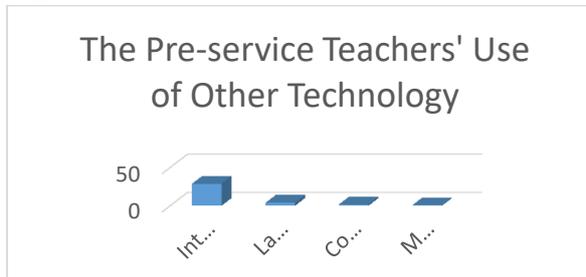


Chart 5 The pre-service Teachers' use of other technology

To summarize, the technology found to be adopted by the pre-service teachers was to facilitate teacher-student interaction and student-student interaction as well as communication in the classroom. In addition, some types of technology were integrated into the assessment stage both to facilitate the pre-service teachers designing and delivering assessment. When using Socrative, they could also receive the assessment report

containing students' score and analysis of the items. This was very useful to help them figure out the validity of the test.

The participants' choice and use of technology could be influenced by some factors. The following section presents the questionnaire results related to the factors which might influence the pre-service teachers using technology for instructional purposes.

1. 29.4% and 47.1% of the participants strongly agreed and agreed with the statement "I use technology in English instructions because the institution (school) provides sufficient technology facilities".

2. 17.6%, 50%, and 26.5% of the participants strongly agreed, agreed, and moderately agreed with the statement "I use technology in English instructions because the supervising teachers has good technology competence".

Based on the findings (questions 1 and 2) in terms of the institutional factors, the availability of technology devices appeared to influence the student teachers more in using technology compared to the modelling of the supervising teachers. It can be inferred that they would adopt technology in their classes if the institution provided the technology devices such as LCD projector in the classrooms.

3. 35.3% and 55.9% of the participants strongly agreed and agreed with the statement "I use technology in English instruction because I have good technology competence".

4. 41.2% and 52.9% of the participants strongly agreed and agreed with the statement "I use technology in English instructions to apply my technology competence".

The findings (questions 3 and 4) implied that personal characteristics seemed to influence the student teachers in adopting technology in the classrooms. They appeared to be confident using technology for they had good technology competence.

5. 32.4%, 38.2% and 23.5% of the participants strongly agreed, agreed, and moderately agreed with the statement "I use technology in English instructions because the students have sufficient technology facilities (laptop, smart phone, internet access)".

The finding (question 5) indicated that students' personal devices might not become a consideration for the participants in adopting technology.

6. 67.6% and 29.4% of the participants strongly agreed and agreed with the statement "I use technology in English instructions in order to give more variations".

7. 64.7% and 26.5% of the participants strongly agreed and agreed with the statement "I use technology in English instructions because the students are more enthusiastic and active attending classes".

8. 64.7% and 29.4% of the participants strongly agreed and agreed with the statement "I use technology in English instructions to increase students' motivation and engagement".

The findings (questions 6, 7, 8) implied that students receiving technology benefits in the classrooms seemed to be the most factor to consider by the pre-service teachers in integrating technology into the instructional practices. It can be inferred that they felt positive about using technology to facilitate students' learning and expected

that it would enhance students' enthusiasm, participation, motivation, and engagement.

9. 61.8% and 29.4% of the participants strongly agreed and agreed with the statement "I use technology in English instructions in order that I can deliver teaching learning materials more effectively".
10. 132.4% and 52.9% of the participants strongly agreed and agreed with the statement "I use technology to deliver assessment more effectively".

The findings (questions 9 and 10) implied that the participants intended to use technology to help them deliver teaching learning materials and assessment more effectively.

From the explanation above it can be inferred that the pre-service teachers' choice and use of technology might be affected by institutional characteristics such as the schools' technology facilities, internet access, and supervising teachers' technology use. Besides, it could be triggered by personal characteristics namely the pre-service teachers' ICT competence and their positive attitude towards technology benefits. As shown in the findings that they tended to use technology more to facilitate students' learning which were expected to enhance students' enthusiasm, participation, motivation, and engagement. In addition, technology adoption was also meant to facilitate themselves to carry out instructional activities and assessment more effectively.

In the context of the teacher education as the researcher's home institution, the English Education study program offers an ICT in Language Learning course. It equips student teachers with sufficient technological

competence. It provides students with both theories and practices of technology use in English as a foreign language teaching. It seems that the student teachers can take the benefits of it after taking this course. It is shown by the questionnaire results. It uncovered the students felt that they obtained sufficient technology knowledge for English instructions after attending ICT in Language Learning course. Besides, teaching and learning materials presented in the course in ICT also support the student teachers' mastery of technology competence. However, student teachers expected more practices and modelling of technology use which represents situated context. This is in line with the previous findings showing that the pre-service teachers adopted basic multimedia such as power points, images, audio and video. With very advanced and progressive development of educational technology student teachers were supposed to adopt more various technology. One student's voice is as follows:

Student teachers' voice: "The teachers (teacher educators) should be the role models of the technology use so that the students will not be confused when they should use it in their future teaching".

In line with DiBella & Williams (2014) to prepare student teachers for better future teaching practices is by modelling and creating technology-rich learning environments.

Therefore, in order to prepare the student teachers to acquire much better technology competence, they are supposed to be equipped with more various technology use. ICT in Language Learning course can be one of the solutions. However, they need to be

given more opportunities in technology practices and it can be integrated into other courses both skill and content. Finally, some recommendations addressed are (1) Revisiting graduate learning outcomes, course learning outcomes and course descriptions of the content courses namely ICT in Language Learning, Theories & Principles in TESOL, Principles in Assessment, ELT across Curriculum, etc.; (2) Integrating technology into content courses; (3) Suggesting more practices on technology use than concepts; (4) Suggesting intensive workshops on ICT for pre-service teachers before their placement in the cooperating schools; and (5) Suggesting collaborative workshops involving pre-service and in-service teachers on ICT.

CONCLUSIONS

To conclude, teaching practicum provides descriptions of what, how and why the pre-service teachers selected and adopted certain technology. This potential to be a reflective practice tool for the teacher education to better prepare student teachers for their future carrier. One of them is to revisit the curriculum program which later can be translated into classroom practices.

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