The Study of Technology Proficient by University Students for Teaching Practice

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Abstract. The purpose of this research is to study the use of technology by students in the education department for teaching practice activities. Technology has an important role in the learning process that students can use to convey material in a variety of ways. It is assumed that the use of technology when students practice teaching can improve the quality of learning and the motivation of the students being taught. Technology is used by students in the process of implementing learning activities and evaluating learning. Therefore, effective teaching activities for students will be helped by the use of technology. The research approach uses quantitative. Research data was collected through a survey method using Google Form. Respondents in the study were students majoring in education who were taken through quota sampling. The results show that students practice teaching using technology to find information on teaching materials, carry out learning activities, and evaluate learning. Technology helps students to complete teaching assignments more efficiently and meaningfully for the students being taught. Mastery of technology makes it easier for students to convey material and carry out assessments to measure student learning outcomes. In the end, technology makes it easy for students to practice teaching activities and influences motivation to become a professional teacher.

Keywords: Teaching Practice, Technology, Students.

1   Introduction

Students in the education department face the challenge of changing the learning process from a face-to-face pattern to online learning. Students need mastery of technology to fulfill their pedagogic competence. Therefore, students need to keep abreast of technological developments to support competence as prospective professional teachers. Current technological developments are not limited to the implementation of learning activities but are also used to assess student learning outcomes. The activity of assessing true learning outcomes has been going on for a long time but has become more massive after the COVID-19 pandemic developed throughout the world. Technology has a major influence on the activities of acceleration, enrichment, expansion, effectiveness, and productivity of the learning process which affect the quality of education (1). The technology developed for the education sector supports a more interac-

tive teaching and learning process, the delivery of various materials, and the exam process that turns into paper less (2). In addition, the use of technology for teaching and learning processes is useful for improving the quality of learning, increasing the effectiveness of learning time, and providing lifelong learning because the learning information contained in technology can be accessed anytime and anywhere (3).

The use of technology needs to be included in the learning design so that teachers can match technology with the material to be delivered. This applies to increasing the effectiveness of learning by synchronizing learning objectives, teaching materials, learning resources, learning media, to learning evaluation. However, the use of technology for learning is still not varied by teachers. Operational ability and technological knowledge that can be utilized for learning did not experience a significant increase in teachers. Even though the teacher has the responsibility to design a learning process that is varied and not boring by utilizing technology (4). The description of the learning material is virtualized by the teacher and included in the teaching tool as a teacher's guide when carrying out the teaching process (5). Considering this, the ability to virtualize learning material needs to be known and understood by students who will carry out teaching practice programs.

Students need to be directed to be able to design learning that utilizes technology before carrying out teaching practices. Technology can be used as an effective learning tool so students who design learning for teaching practice need to consider choosing technology to increase the positive impact of learning (6). Students need to improve literacy in technology, information, and communication to support their own competence as prospective teachers who will manage the learning process (7). This relates to the readiness of human resources to be involved in digital technology-based learning processes. Nevertheless, the use of technology for teaching practice activities needs to consider aspects of the needs, functions, and purposes of its use so as not to disrupt the learning designs that have been prepared (8). Previously students who would carry out teaching practices needed to know and be proficient in using technology for learning activities.

The COVID-19 pandemic has made technology aware of the important role for education. Students who will do teaching practice are challenged to be able to go beyond the barriers that limit technology to the learning process (9). Preparations for carrying out teaching practice programs are carried out as long as student's study on campus. This includes studying a variety of technologies that can be used for practical activities included in the learning design. Transformation to carry out teaching practices that highlight mastery of technology requires overall readiness starting from procuring technology that students use for learning and preparing students through the provision of comprehensive information by lecturers (10). The experience that students gain when practicing teaching will become a provision when students work as a professional. Therefore, students are thoroughly prepared by considering changes to the profession that will be carried out in the future.

In reality, the ability of students who will practice teaching is not limited to mastery of technology for the implementation of learning activities. However, including for the assessment process carried out in schools. Students need to be prepared to master technology to evaluate learning using available technology. Technology can be used in an

integrated manner by linking it to learning activities and used periodically according to the time of implementation of the learning evaluation (11). The use of technology for learning evaluation activities requires the readiness of human resources and supporting facilities and infrastructure (12). In the end, the use of technology for the evaluation process will have a positive impact on aspects of various forms of evaluation, the dedication of technology to education, allowing for flexibility, interactive assessment, and assessment efficiency. Changes in valuation using technology also have an impact on environmental aspects where the assessment ultimately leads to being paperless which supports saving the environment.

Seeing the effectiveness of technology in learning encourages students who will do teaching practice to be able to master technology. Students need to be proficient in using technology to implement learning activities and evaluate learning. In addition, students also need to consider the synchronization between learning objectives, learning time, learning activities, learning resources, technology used, and methods of assessment when preparing learning designs for teaching practice programs. This article focuses more on students' skills in using technology to support practical processes at school. The abilities possessed and the duration of time required to teach using digital technology.

2 Methodology

This study focuses on students' mastery of technology to carry out teaching practice programs, through a survey conducted as a collection technique from questionnaires distributed to 100 students majoring in education in Java Island. Surveys are used to describe the behavior and opinions of the population by making generalizations based on the answers given (13). We determined the sample based on quotas to provide a statistical likelihood based on respondents' answers. The respondents used in this research were 100 people who met the research criteria. All respondents accessed the Google form link that had been created. Furthermore, 98 respondents' answers were considered valid. Meanwhile, 2 answers were considered invalid because the answers were incomplete. A quantitative approach is used with the survey method to obtain statistical data from the variable mastery of technology and teaching practice activities. Statistical data is then described to generalize the claims for the answers given by the respondents. Questionnaires were distributed using the Google form to make it easier to collect data on respondents' answers and expand the reach of obtaining answers. Figure 1 provides information on courses students have taken in preparation for teaching practice programs related to mastery of technology.
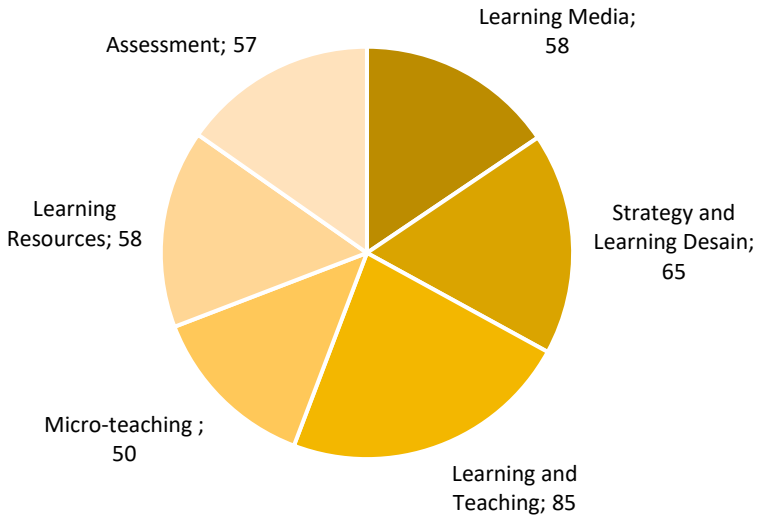
Figure 1. Learning Subjects for Preparation Teaching Practices

Data analysis is used by interpreting research data in the form of numbers to make it simpler and easier to understand. Next, the data is analyzed and the information obtained is interpreted to become a meaning that can answer research questions (14). Data in the form of numbers is then processed to produce an explanation in the form of a description. Answers in the form of descriptions are then used to answer the research questions posed to determine student mastery of teaching practice activities.

3   Result and Discussion

### 3.1   Preparation for Teaching Practice Programs

We found that to form students majoring in education to become professional teachers, they need to be equipped with an understanding of the duties and functions of being a teacher. Survey data shows that 76.6% of students have the desire to become teachers after being prepared to become professional teachers with information about the duties and functions of the teacher, while 23.4% indicate that students do not yet have the desire to become teachers even though they have been prepared by being given information on the duties and functions of the teacher. Students need to be given guidance to improve their quality through changes in attitudes, behavior, speech, prophecy, manners, and culture that support them as professional teachers (15). This includes students being prepared to have knowledge and mastery of information technology to overcome obstacles to changes in the field of education. Students are challenged to be able to provide high-quality education when carrying out teaching practice programs (16). This condition certainly needs to be supported by students' skills to operationalize technology in learning design.

Preparing for practical teaching programs, students can use technology to search for material based on various sources on the internet, use technology as a learning medium, and conduct assessments using available applications or platforms. There is a strong relationship between schools and the Internet to overcome and maintain school operations, especially during and after the COVID-19 pandemic (17). The use of the Internet by schools cannot be separated from the tools needed to connect it. Technology plays a major role in learning activities even when schools cannot operate normally. This is what students who will carry out teaching practice need to know, that changes in the field of teaching are real and require careful preparation to continue teaching practice programs. Figure 2 shows students have been able to use technology to find teaching materials via the Internet.
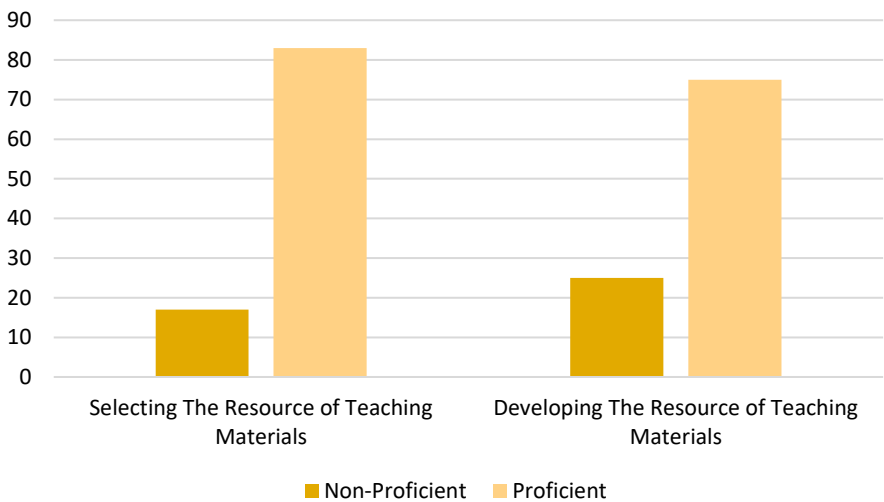

Figure 2. Technology for Resource of Teaching Materials

Teaching practice programs also need to be prepared by students through learning designs that will be used in class. Students need to be guided to master technology, information, and communication literacy to carry out learning through the use of digital media (18). To use technology as a learning medium, students need to have the skills and competencies needed to integrate technology into teaching practice to benefit from the use of technology in the learning process (19). Thus, the preparation of students to use technology when practicing needs to consider various things, including the skills possessed, knowledge of technology, the use of technology, and the purpose of using technology. The learning media used need to be varied to provide different learning experiences to students. This requires students to master several learning media concretely. Figure 3 shows the ability of students to use digital-based learning media.

Non-proficient
6%

Proficient
94%
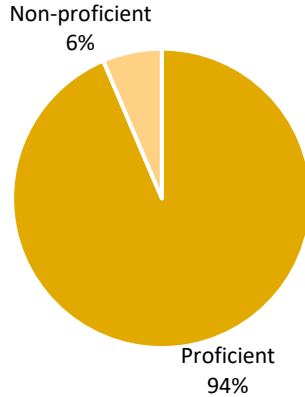
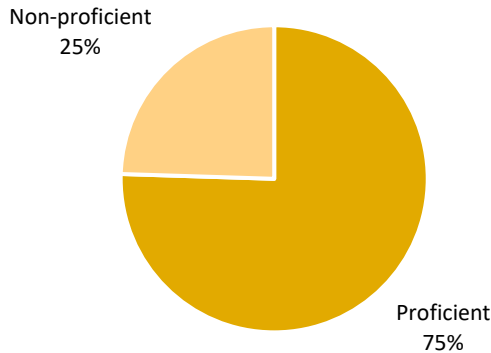**Figure 3.** Students Abilities for Using Digital Learning Media

Having the ability to use digital learning media for teaching practice is not a benchmark that the selected media is following the learning objectives and learning materials. Therefore, students need to have the ability to choose appropriate digital learning media and be able to develop these media. Technology that is used effectively requires users to have high qualifications equipped with professional skills and digital literacy (20). Students are faced with the challenge of becoming highly qualified graduates who master technological and environmental resources (21). Figure 4 provides information about the selection of learning media by students.

Non-Proficient
18%

Proficient
82%
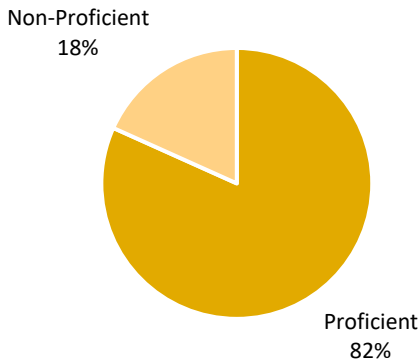
Figure 4. The Ability for Selecting Digital Learning Media

Student preparation for teaching practice by mastering technology is related to the frequency of technology use (22). There has been an increase in the use of technology including an increase in the assessment of the function of technology in the educational field (23). Technology in the field of education is not only in the form of learning media but can also be in the form of media for evaluating the learning process. Students who will do teaching practice need to master an application or platform that functions for

assessing the learning process in class. The survey results showed that 80.9% of students had skills in compiling learning evaluation questions and 19.1% said they did not have the skills in compiling evaluation questions. Figure 5 provides information on students' ability to make evaluations in digital form.

Figure 5. Students Ability Using Digital Assessment

The adoption of digital technology for learning activities allows for increased work on assignments and student exams via computers instead of using paper (24). Learning creativity using technology is identified as including developing ideas, making connections, creation, collaboration, communication, and evaluation that utilize technology (25). In the end, mastery of technology for students who will carry out teaching practices needs to be carefully prepared. This is to support the success of students completing teaching practice programs. This condition indicates that there is a relationship between mastery of technology and teaching practice programs conducted by students.

3.2 Utilization of Technology for Student Teaching Practice

While studying at lectures, students majoring in education are allowed to explore concepts, conduct case analyses, and find learning resources independently. In the end, knowledge during lectures needs to be practiced more concretely to provide a clearer picture of the profession to be carried out in the future. Changes in learning patterns force teachers to have digital learning skills that act as users and at the same time become providers (26). The teacher's way of teaching is not the same as before, so the current teacher's knowledge will not be the same as the teacher's knowledge while still in college (27). This is based on changes in the field of education that require teachers to continue learning. This condition applies to students who will do teaching practice. Students are guided to find out the problems and examples of cases in learning that have occurred recently at school. Students need to actively seek various sources such as scientific articles, books, or other learning resources that allow information to be obtained.

Students are directed to use technology to find sources of information at the same time as they need to increase their ability to master technology for education. Therefore, students need to have the ability to independently manage their learning process through time management and organize knowledge systematically and effectively to be easily understood (28). It is important to know the forms of school culture, aspects that influence the learning process, and collaboration with colleagues (29). These various activities will be found by students in direct teaching practice activities. Through the teaching practice program students will directly see how schools can operate including support for effective learning.

Teaching practice activities provide experiences for students to find diverse student learning motivations to encourage them to use tools and technology to facilitate a fun learning process (30). Another thing that students will find when practicing is the use of technology that affects students thinking abilities (31). This means that the use of technology when students practice teaching has a broad impact on students and valuable experience for students majoring in education. Technology that students use when practicing provides opportunities to develop learning programs to interact with students, share knowledge in different ways, collaborate with other parties online, and reflect (32). There are advantages and disadvantages to students being able to use technology for teaching practice.

The advantage of student's ability to use technology for teaching practice is that students can design fun and meaningful learning. Furthermore, students can increase student learning motivation because it presents a different learning experience. In addition, students can set an example to more senior teachers in terms of using technology. Then, students can develop themselves to continue learning and optimize their ability to master technology for learning. On the other hand, there is a shortage of using technology when teaching practice, including students becoming dependent on technology when teaching. Then, there is a possibility that the technology chosen and used does not match the objectives and learning materials.

From another point of view, there is an opportunity to increase student skills to become professional after practicing teaching. Completing challenges in the field of education when carrying out teaching practices is an added value for future student career advancement (33). Practical teaching skills are invaluable for students who can pave the way to prepare themselves to develop their professional careers (34). Teaching practice programs need to provide opportunities for students to improve their knowledge and professional skills as prospective teachers (35). In the end, improving teacher professionalism is inseparable from the ability to design learning processes, master of technology, and uphold professional ethics.

4   Conclusion

Students need to be prepared to have proficiency in using technology to carry out the teaching process, search for information on teaching materials, and use digital media for assessment. The data states that students have the skills to use technology in learning activities, especially to find teaching materials. This condition certainly affects

the depth of teaching materials provided by students when practicing teaching. On the other hand, the preparation of students for teaching practice is the proficiency in using and selecting instructional media that are aligned with the learning objectives and the final evaluation. The selected technology cannot be done randomly but needs to be considered by looking at the suitability between learning objectives, teaching materials, time, learning activities, learning resources, and the evaluation that will be carried out. Another thing to prepare students for teaching practices that involve technology is the use of digital assessment media which can provide new experiences for the student assessment process.

The use of technology in student teaching practice programs is used not only to support the learning process when practice is carried out but also to support students in preparing themselves to take part in teaching practice programs. In the end, students not only act as technology providers but also become technology users. Experience using technology when practicing teaching will provide an overview of activities when students have become professionals. Being able to solve educational problems by involving technology can be an added value for students to develop professional careers in the future.

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