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*by Palupi Sri*

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## Achievement of Pre-Service Teacher's Competency in Educational Technology during SEA-Teacher project: Student's Perception in Online system

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**Abstract.** The aims of this study is to determine the perceptions of SEA-TEACHER project students at University PGRI Yogyakarta (UPY) using online system towards achieving competence in educational technology. The research focus on the achievement of competencies in educational technology that were emphasized concerning microteaching, time allocation, and the optimizing of the implementation of the project, and the program patterns. The population of this study is students who joined UPY SEA-TEACHER program that began in 2017 to 2019 while the sample were students of mathematics education and elementary teacher education department. Data collection techniques were done by questionnaire, documentation, and interview. Collecting data was submitted by online system. Data analysis techniques using qualitative analysis that described the achievement of competency categorization and quantitative analysis that will show the magnitude of the categorization of these variables. The results showed that the achievement of competency in educational technology through the SEA-Teacher program as the description: the implementation have been interrelated with microteaching, there were no difficulties in allocating time, optimizing performance the program was stated to be optimal, and there was an expectation of the implementation of the SEA-Teacher program that conducted microteaching with English at least one meeting.

### 1. Introduction

PGRI Yogyakarta University has a work unit that handles student activities in-field experience programs, from now on, referred to as Pre-Service Program Units (PSPU). As a student of the Teaching and Education Faculty stages for the Pre-Service Program (PSP) is very important to equip students in their preparation to become professional teachers. Teachers who are experienced in learning are involved in a complicated process, requiring cognitive interrelation with the emotion of the teachers, both as a complicated process requiring both personal and collective cognitive and emotional involvement of teachers [1]. PSP is one of the cumulative courses in the undergraduate program undertaken by students majoring in teacher training.

The program is organized to increase PSP participants' awareness of essential components in teaching and learning activities and to encourage them to be able to implement college assignments and improve personal skills as creative teachers. Consciousness arises from feelings and actions related to one another. the awareness possessed by a person can be seen from changes in behavior and



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attitudes as a result of receiving and processing information [2]. PSP participants are taught how to make the most effective choices when facing challenging situations in the classroom. Research in Education in the middle of the previous century focused on developing teacher knowledge as a basis for knowing the interpretation of student behavior in classroom learning [3]. They are also taught how to balance their roles as modern teachers, starting from being instructors, creators, managers, mentors, to role models. However, several things must be considered in creating a professional teacher. It is because several studies mention a reciprocal relationship between teacher welfare and instructional behavior in producing quality students [4].

In general, PSP provides opportunities for students to know the realm of teacher training before actually engaging in teaching at school or as a teacher. In PSP facilitates students to master four main competencies as a professional teacher, namely pedagogic, personality, professional, and social competencies. The competencies and skills referred to as 21st-century skills that will be needed by students are those that facilitate them to become individuals who have social sensitivity, adequate academic [13] professional levels, and have success both at the national and international levels [5].

Based on the regulation of the minister of national Education, it is explained that the competency standards possessed by teachers are a set of all components in terms of knowledge, expertise or skills, and proper behavior that is guided by positive values. It is intended so that teachers can actualize all daily learning activities to fulfill their responsibilities virtually [6]. The four competencies in educational technology are taught in the form of two sets of PSP I or often called micro teaching, and PSP II, which carry out teaching [11] activities in partner schools including in ASEAN countries.

The so-called pedagogical competence is the ability of teachers to make modifications and combinations of teaching principles with the knowledge and background of their students. In essence, micro teaching can contribute to develop [4] various pedagogical skills that are very important for prospective teachers [7]. At the same time, personality competence is the ability of teachers [4] be role models for their students. In comparison, professional competence is the ability of teachers to use the most effective techniques to involve students inside and outside the classroom. Social competence is the ability of teachers to identify aspects of the environment that can improve the effectiveness of learning in the school.

Through micro teaching, prospective teacher students are equipped with how to draw up a Lesson Plan (LP) and its implementation to get the maximum opportunity to express themselves in a positive environment. The experience in participating in micro teaching will have a significant impact on pre-service teachers in knowing the reality of the learning process, fully understanding the role of a teacher, and practicing composing lesson plans, making decisions, learning to apply instructional learning, and to training student confidence [8]. Not only that, but prospective teacher students also learn how to observe learning and reflect and prepare a report. Likewise, for teaching competencies in ASEAN countries that cannot even be separated by various teacher administrations and interactive learning processes. The SEA-Teacher Project is a collaborative program carried out by SEAMEO, which facilitates learning for pre-service teachers in having teaching experience in partner schools in other countries in Southeast Asia [9].

Although micro teaching provides many benefits for students, it is not uncommon to find challenges in implementing them. One of the main challenges is the lack of adequate supervision from teachers and supervisors. Not all teachers and supervisors who are given the task of accompanying prospective teachers have the time, ability, and even the willingness to guide future teacher students, either as examples or advisers or as reliable advice providers when practicing in class. For this reason, it is necessary to conduct a study related to the implementation of mentoring for students who will practice teaching in ASEAN countries. It is, after this, referred to as an analysis of students' perceptions of the guidance process in the implementation of teaching practices in ASEAN countries. Inputs related to implementing the SEA-Teacher assessment project are expected to become lessons that can be applied in schools in developing competencies to become professional teachers in the future [10].

The role of mathematics education in the MEA era must involve the part of Higher Guides in developing mathematical abilities based on the results of observations in everyday life. These problems can be easily solved with the help of mathematics. So that in the short-term needs of teachers needed to participate in providing creativity and innovation [11] in learning mathematics in students. Besides, in the learning process, it is also necessary to develop stages of learning that can stimulate students [6] to explore and build mathematics following the levels and abilities of students in school [12] so that mathematics becomes exciting and enjoyable and significantly beneficial in our daily lives.

Teacher competencies expected in the ASEAN community association are based on Southeast Asian teachers [13] competencies. There are four categories: 1) know and understand what I teach; 2) Help my students learn; 3) Engage the community; 4) Become a better teacher every day. Several teacher competencies [14] must be mastered, namely, pedagogic, professional, personality, and social. Pedagogic competence is the ability to manage student learning. Personality competence is a strong personality ability with a noble, wise, and classic character and can be a good role model for students. Social competence is the ability of teachers to communicate and interact effectively and efficiently with students, fellow teachers, or colleagues' parents or guardians of students and surrounding communities. Professional competence is the ability to master material broadly and deeply especially educational technology.

Competency to be a teacher in ASEAN countries also has standards [15] summarized in SEAMEO INNOTECH, which shows 6 significant characteristics that define a "competent teacher" in Southeast Asia which relates to 1) pedagogical skills, 2) student performance assessment skills, 3) classroom management skills, and 4) professional development skills [16]. Perception is an observation about objects, events, or relationships obtained by concluding information and interpreting messages. The perception that is viewed subjectively states a subtle and continuous awareness related to one event to the next, and the subject knows all forms of change without any discontinuity [17]. Also, it suggests that perception is organizing, interpreting the stimulus received by organisms or individuals so that it is something meaningful and is an activity of integration within the individual. Another opinion suggests that perception is defined as a process when someone organizes and interprets their sensory impressions to give meaning to their environment. Thus it can be construed that perception is an individual's interpretation of the stimulus on an object or event that he obtained to become an experience for him. The perception of each individual can be very different, even if the things observed are the same. It can also be said that perception is the result of one's thoughts from certain situations.

The perception that will emerge can be a positive perception and negative perception [18]. b. Factors Affecting Perception The process of the formation of perception is very complicated. It is determined by the dynamics that occur in the individual when the individual observes the object in 2 involving psychological aspects and the five senses. Perception is defined into two, namely: 1) Functional Factors are factors that originate from needs, experience, and other things, including what we call personal factors. Functional factors that determine perception are objects that fulfill the purpose of the individual conducting the perception. 2) Structural Factors originate solely from the nature of the physical stimulus to the neurological effects caused by the personal nervous system. Structural factors that determine perception according to Gestalt theory, if we want to understand an event, we cannot examine the different factors but look at them in an overall relationship. Sometimes negative perceptions of the learning environment will affect the student's learning spirit [19]. So it is essential to know the perception of students in the implementation of sea-teacher projects to understand the competencies aimed at this program.

## 2. Method

This research will be conducted at the University Of PGRI Yogyakarta, Faculty of Teacher Training and Education in the Mathematics Education Study Program and Elementary Education Study Program. This research will be shown in the even semester of the 2019/2020 school year.

This type of research is a descriptive study that seeks to reveal the pattern of implementation of the UPY SEA-Teacher program for Mathematics Education Study Programs and PGSD Study Programs from 2017 to 2019 according to students' perceptions. The study was conducted by a survey of students practicing the UPY SEA-Teacher program. The research variable is the achievement of competencies that are emphasized concerning micro teaching, time allocation, and the perception of optimizing the implementation of the program from students, and the program patterns expected by students. The study population was students practicing the UPY SEA-TEACHER program that began from 2017 to 2019. The research sample was students practicing from the mathematics education and elementary teacher education courses.

A research instrument is a tool used in the process of obtaining data. The instruments used in this study are as follows: (1) Questionnaire, (2) Documentation, (3) Interview. The questionnaire instrument is a type of non-test that contains a list of questions and is given to respondents to be filled with the types of open items. This questionnaire is the main instrument that functions to obtain robust data and leads to research results consistent with theoretical and empirical data. Specifically, this questionnaire instrument was used to reveal students' perceptions of practicing data on the patterns of implementation of the UPY SEA-Teacher program for Mathematics Education Study Programs and PGSD Study Programs in 2017 to 2019, which included competency achievement. The research instrument in the form of documentation is used to dig up information about the guidance notes by the supervisor in the implementation of the SEA-Teacher program, student notebooks, work program matrices, and others. Interviews were conducted to confirm and complete the results of the documentary and questionnaire results. Interviews were conducted with students drawn at random with an equal number of men and women. All of the instrument were arranged in online system.

Qualitative data analysis is used to answer the entire problem formulation using the triangulation method, which is a combination of the results of documentation, interviews, and questionnaires. The results will confirm students' perceptions of the pattern of guidance, guidance intensity, optimization of program implementation, implementation time, and achievement of the competence of the UPA SEA-Teacher UPY Mathematics Education Study Program and PGSD Study Program in 2017 to 2019 in the category of very good, good, or less well. The data triangulation method was expected to obtain complete, comprehensive, and under field facts data. Quantitative data analysis is used to clarify and confirm the results of qualitative data analysis by showing the percentage of implementing the SEA-Teacher UPY program for students in the Mathematics Education Study Program and the PGSD Study Program in 2017 to 2019.

### 3. Result and Discussion

#### 3.1. SEA-Teacher Project related to PSP I (micro teaching)

The implementation of micro teaching in PSP I courses helps students prepare themselves to practice teaching in partner schools later. Therefore, the performance of micro teaching requires evaluation so that optimal student competencies in teaching practices in ASEAN countries can be obtained. The results of data analysis showed that the majority of respondents stated PSP I (micro teaching) with the SEA-Teacher program were interrelated. A percentage of 83.3% indicates this while the rest stated neutral, amounting to 16.7%. Thus it can be said that the implementation of the SEA-Teacher program is interrelated with PSP I. Practise to teach in micro teaching program can facilitate the the competencies of student for using educational technology that improve the quality of learning process. Graphically, it is presented in the figure 1.

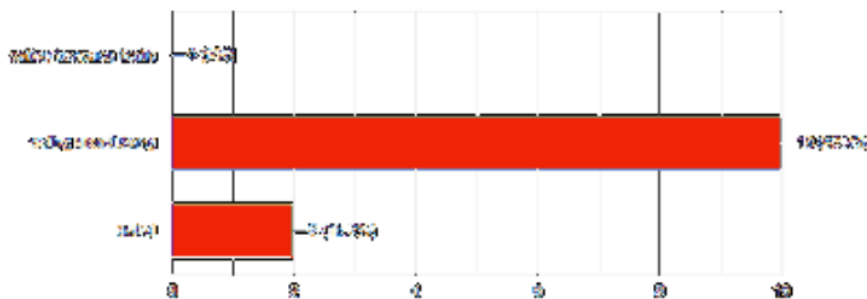


Figure 1. Student perception of PSP I and micro teaching linkage

Being a student exchange participant in the SEA-Teacher project positively impacts students who always involve themselves actively. Based on research conducted by Ariyanti, it was stated that the results of the interviews with the SEA-Teacher project participants indicated that they already knew the purpose of the SEA-Teacher implementation program debriefing on micro teaching<sup>9</sup> which resulted in high enthusiasm [20]. Furthermore, Meutia, Elyzza, and Yusnila also emphasized, based on the results of their research, it was stated that the competence of prospective teacher students tended to increase significantly after participating in a micro teaching class [21].

3.2. Respondents' perceptions of the implementation of the SEA-Teacher program in terms of time allocation

This question aims to find out <sup>11</sup> time allocation for implementing the SEA-Teacher program by conducting lectures on campus. Based on the results of data analysis, it was found that the majority stated there were no disturbances or did not feel difficulties in arranging the allocation of lecture time on campus with the implementation of the SEA-Teacher program. If the time allocation not be a disturbance then the educational technology competencies of pre-service teacher can enhance more. A percentage of 91.7% indicated it, and the rest feel there is little difficulty in allocating time, which is characterized by a rate of 8.3%. Graphically, seen in the figure 2.

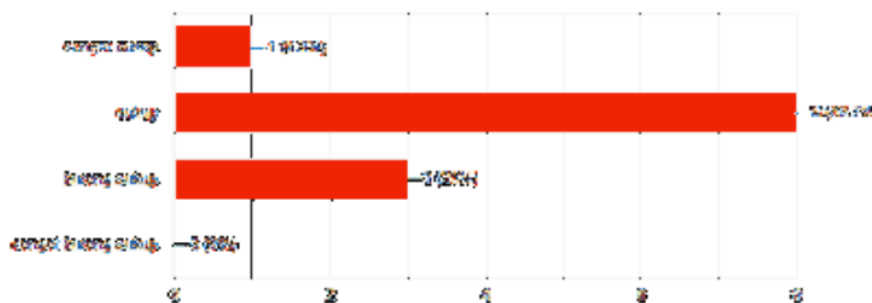


Figure 2. Student perception of time proportion of SEA-Teacher program

The provision of time to conduct guidance in preparation for teaching in ASEAN Countries is very helpful for students in setting the time. They use their time to gain insight into developing previous incomprehension to become more understanding. So they don't have very burdensome homework related to sea-teacher projects that need to be completed immediately. Based on the student's perception that the assumption or exaggeration of assignment owned by him will affect the quality of the results [22].

### 3.3. Respondents' perceptions of the optimization of the implementation of the SEA-Teacher program

Optimization of the implementation of the SEA-Teacher program based on students' perceptions was stated to be optimal, as seen by the results of the data acquisition of 58.3% of respondents said optimal, and 25% of respondents stated very optimally. In contrast, the rest stated less than optimal, as indicated by a large percentage of 16.7%. The assessment of the optimization of the SEA-Teacher program is related to the goals, vision, and mission of the mathematics education bachelor program and elementary school teacher education at PGRI Yogyakarta University. Then, for more capability of the student can emerge as a part of educational technology of pre-service teacher. Graphically, the results of data analysis can be seen in the following figure 3.

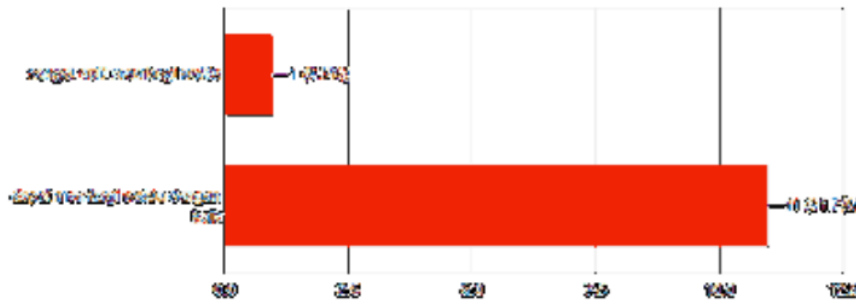


Figure 3. Student perceptions of the timing of the SEA-Teacher program

UPY's mission vision is complex to make a superior and leading campus. More importantly, UPY's mission goals and fiction have been sought to embrace all the needs of alumni in finding work in the future. One of the mission's visions is also related to the competence of teachers who will compete and fill the learning to the students as conveyed that the goal in the 21st century for the role of teachers is to develop critical and creative thinking skills [23].

### 3.4. The pattern of SEA-Teacher program expected by students

The acquisition of data regarding the expectations of the SEA-Teacher program alumni towards the progress of the next program is mentioned in several points, which include the need to hold micro teaching in English at least once to appear to provide an opportunity for students to measure their competence and confidence. This condition appear the enthusiasm of students to increase their ability for handle the class. So, it can support the educational technology for managing the class. In addition, the introduction of some local cultural knowledge also needs to be conveyed as a form of engagement between students and students of practice. This research topic will always provide repeated reviews with a statement saying that phenomena can be explained individually, by referring to local characteristics and not necessarily conveying these local perceptions [17].

## 4. Conclusion

From the description above, the following conclusions can be drawn achievement of competency in educational technology through the SEA-Teacher program was included in both categories with the inscription: 83.3% of respondents stated that the implementation of the SEA-Teacher program is interrelated with micro teaching, 91.7% of respondents said there was no difficulty in allocating time, optimizing the performance of the program was stated to be optimal as indicated by 58.3% of respondents stated that it was optimal and 25% of respondents said that it was very optimal, and there was an expectation that the SEA-Teacher program would do micro teaching in English at least one meeting.



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