



Analysis of Pedagogic Competency of Mathematical Education Students in Microteaching Course at the Universitas Sembilanbelas November Kolaka

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Abstract

One of the competencies that must be possessed by teachers or prospective teachers to become professional teachers is pedagogical competence. Pedagogic competence is the ability of a teacher to manage the learning process that relates to students. Therefore, pedagogical competence is very important for mathematics education students as prospective teachers. This study aims to determine the pedagogic competencies possessed by students, to know the strengths and weaknesses of students' pedagogical competencies, to identify the causes of weaknesses in students' pedagogical competencies, and determine alternative solutions to the weaknesses of students' pedagogical competencies. This research is a descriptive study with a qualitative approach. The subjects in this research are Mathematics Education Study Program students who took Microteaching courses. Data collection in this study was carried out through giving tests and interviews. Data was analyzed in quantitative and qualitative ways. The conclusion of the results of this study are 1) students' pedagogical competencies are in the low category; 2) The advantages of pedagogical competencies possessed by students are a) understanding the students' characteristics; b) mastering the concepts, principles, and procedures for developing curriculum or expertise programs; c) creating learning situations that are active, interactive, communicative, effective, and fun, as well as effective students guidance. While the weaknesses of pedagogic competence possessed by students are: a) mastering learning theory and learning principles; b) mastering theories, principles, and learning strategies; c) mastering the use of media, communication technology, and information, as well as reflective actions to improve the quality of learning; d) mastering concepts, principles, and learning assessment strategies; e) understanding the process and results and the impact of learning for students. 3) Factors that lead to the students' weak

pedagogical competence are lack of students' motivation in improving and developing their pedagogical abilities and lack of tasks or exercises carried out by students in developing their pedagogical abilities, and lack of students' creativity in completing tasks. 4) Efforts that can be used as alternative solutions namely applying the Lesson Study approach and providing material reinforcement of pedagogic abilities.

Keywords: competence, students' pedagogical, microteaching

A. Introduction

The teacher is an educator who plays an important role in learning. The number of trainings for teachers has been prepared by the government in order to create competent and professional teachers in education. According to Law No. 14 of 2005 concerning Teachers and Lecturers, in Chapter VI article 3, it is emphasized that the competencies that must be possessed by a teacher include pedagogical competence, personality competence, professional competence, and social competence. One of the competencies that must be possessed by prospective teachers to become professional teachers is pedagogic competence. Pedagogic competence is the ability of a teacher to manage the learning process related to students, including understanding insight or educational foundation, understanding students, developing curriculum or syllabus, designing learning, implementing learning that is educational and dialogic, utilizing learning technology, evaluating learning outcomes and the students' development to actualize their various competencies so that the pedagogical competencies possessed by the teacher influence students' achievement. Therefore, prospective teachers must have pedagogical competence. Pedagogic competencies can be trained through microteaching courses. The microteaching course is a compulsory subject that must be taken by students. The microteaching course is a means for students to practice teaching on campus and as a provision for field experience practice (PPL) in schools. The micro teaching experience provides benefits for prospective teachers, namely showing prospective teachers in actual teaching, helping prospective teachers to see the importance of implementing learning, decision making, implementing instruction, and enabling prospective teachers to develop and improve their skills and help prospective teachers to build self-confidence they teach (Peker, 2009).

In the Mathematics Education Curriculum at the Universitas Sembilanbelas November Kolaka, microteaching courses are in the sixth semester as preparation for students to implement PPL in semester VII. Students have practiced first on microteaching courses before facing more complex competencies in implementing PPL at school. Based on the results of interviews with tutor teachers in schools where the PPL conducted in the 2016/2017 Academic Year obtained information that most students are still low in pedagogical competence compared to three other professional teacher competencies, namely personality competence, professional competence, and social competence.

B. Literature Review

The Law of the Republic of Indonesia Number 14 of 2005 concerning teachers and lecturers in Article 1 affirms that competence is a set of knowledge, skills, and behaviors that must be owned, internalized, and mastered by teachers or lecturers in carrying out professional duties. Article 10 states that teachers' competencies include pedagogical competence, personality competence, social competence, and professional competence obtained through professional education (Ministry of National Education, 2015).

Permendikbud 2014 Number 90 regarding competency standards, emphasizes that pedagogical competencies include 1) understanding the characteristics of students; 2) mastering learning theory and learning principles; 3) mastering the concepts, principles, and procedures for developing curriculum or expertise programs; 4) mastering the theories, principles, and learning strategies; 5) creating an active, interactive, communicative, effective and enjoyable learning situation, as well as effective student guidance; 6) mastering the use of media, communication technology, and information, and reflective actions to improve the quality of learning; 7) mastering the concepts, principles, and learning assessment strategies; 8) understanding the process and results and the impact of learning for students. Rahman (2013) states the ability to manage learning, which includes planning, implementing and evaluating

student learning outcomes. This competency must be possessed by every teacher in order to achieve success in learning and teaching (Ministry of National Education, 2014).

Micro teaching is a technique used in teacher education where a prospective teacher teaches a small part of the lesson to a small group of classmates and teaching competencies are carried out under supervision (Gover, Phillips, Walters; Capel, Leaks, Turner; Akalın in Kilic, 2010). Whereas Gee (in Kilic, 2010) states that micro teaching helps develop skills in arranging lesson plans, choosing teaching goals, speaking in front of groups, and asking questions, and performing evaluation techniques.

C. Methodology

This type of research is descriptive research with a qualitative approach. This research was conducted in the sixth semester of the 2017/2018 Academic Year in the lecture room of the microteaching course Mathematics Education Study Program, FKIP, Universitas Sembilanbelas November Kolaka. The subjects in this study were mathematics education students who took microteaching courses, which were 26 students. Data collection in this study was carried out by giving a pedagogical ability test and interview. The recorded interviews use tools to obtain additional data as the main data support. The interview conducted was a type of semi-structured interview to support test results data in analyzing and identifying students' pedagogical abilities.

The process of data analysis begins with reviewing all available data. Data obtained from the results of tests of pedagogic abilities and interviews were analyzed in quantitative and qualitative ways while documentation is used to strengthen the data that has been obtained. Drawing conclusions is based on the results of data collection and the results of interviews with students who took microteaching courses.

D. Findings and Discussion

1. Findings

Comparison of the percentage of the total number of students and the average score of pedagogical abilities for each category of high, medium, and low groups is presented in the form of bar charts in the following figure.

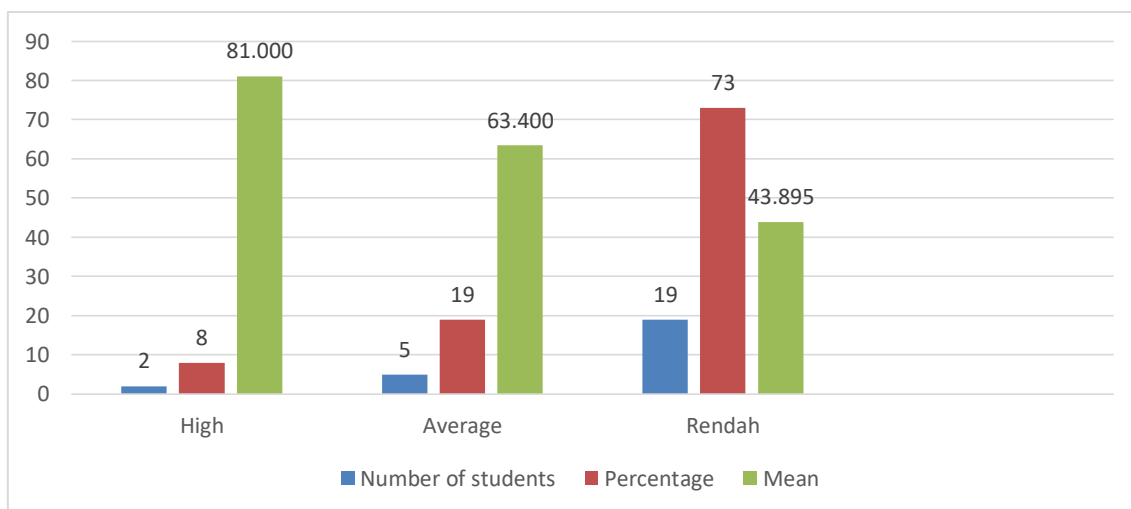


Figure 1. Percentage of the total number of students and the average score of pedagogical abilities for each category of high, medium, and low.

The results of the descriptive analysis of students' pedagogical abilities for each indicator are presented in the following table 1.

Table 1. Percentage and Average Pedagogical Ability of Students for Each Indicator

No.	Indicator	Number of students	(%)	Mean
1	Understanding the students' characteristics	16	62	62,5
2	Mastering learning theory and learning principles	1	4	37,179
3	Mastering the concepts, principles, and procedures for developing curriculum or expertise programs	15	58	55,128
4	Mastering theories, principles, and learning strategies	7	27	50

5	Creating an active, interactive, communicative, effective and enjoyable learning situation, as well as effective students' guidance	13	50	63,85
6	Mastering the use of media, communication technology, and information, and reflective actions to improve the quality of learning	2	8	48,846
7	Mastering concepts, principles, and learning assessment strategies	7	27	47,115
8	Understanding the process and results and the impact of learning for students	6	23	57,692

2. Discussion

Based on the results of the analysis obtained the number of pedagogical abilities of students is 1313 with an average value of 50.5, median and mode is 49, the standard deviation is 14.061. Based on the students' pedagogical ability category, the average value for the high category is 81, the medium category is 63.400, and the low category is 43.895. In general, the students' pedagogical abilities who take microteaching courses are still low. The test results also show that students who take microteaching courses have sufficient mastery of the 1st indicator, 3rd indicator, and 5th indicator of pedagogic ability, namely the ability to understand the characteristics of students, the ability to master concepts, principles, and procedures for curriculum development or expertise, and create learning situations that are active, interactive, communicative, effective, and fun, as well as effective students' guidance. As many as 62% or as many as 16 students with an average test score of 1st indicator is 62.5 and for 58% or 15 students with an average score of ability in the 3rd indicator is 55.128. Whereas in the 5th indicator, 50% or as many as 13 students have sufficient ability to create an active, interactive, communicative, effective and enjoyable learning situation, as well as effective student coaching with an average score of 63.85. Students are weak in indicators 2, 4, 6.7 and 8 are mastering learning theory and learning principles; mastering the theories, principles, and learning strategies; mastering the use of media, communication technology, and information, and reflective actions to improve the quality of learning; mastering concepts, principles, and learning assessment strategies; successively understanding the process and results and the impact of learning for students.

Based on the interviews of students with low category pedagogical competencies, information was obtained about the factors that led to the of students' weak pedagogical competence, namely lack of students' motivation in improving and developing their pedagogical abilities and lack of tasks or training in developing pedagogical abilities able to organize their study time, lack of students' creativity in completing assignments.

Some efforts that can be used as alternative solutions to overcome the weaknesses of the students' pedagogic competencies are those who are lecturers of subjects related to pedagogic competencies which provide motivation and reinforcement of students' pedagogical competency material including the following. a) understanding of insights or educational basis; b) understanding to students; c) development of a curriculum or syllabus; d) Learning design; e) Implementation of educational and dialogical learning; f) utilization of learning technology; g) evaluation of learning outcomes; h) development of students to actualize their various potentials. Lecturers also need to provide assignments and exercises that lead to students' creativity in doing assignments. This is in accordance with the results of research conducted by Triyono, et al. (2011) which shows that giving reinforcement of pedagogical competency material to students will be able to give enthusiasm to students so that they can increase active participation in applying pedagogical competencies and student motivation. In addition, the Lesson Study approach can also be used to improve the students' pedagogical competence as model teachers in microteaching courses and can increase student motivation in teaching practice. This is in accordance with the results of a study conducted by Arifin & Gultom (2016) which concluded that Lesson Study can improve the students' pedagogical competence as model teachers and can increase the motivation to teach students involved in Lesson Study with the stages of implementation starting from the plan, do, and see.

E. Conclusion

- 1) Pedagogical competencies in mathematics education students in microteaching courses are in the low category;

- 2) The advantages of pedagogic competence possessed by students of mathematics education in microteaching courses are only on three indicators, namely a) understanding the characteristics of students; b) mastering the concepts, principles, and procedures for developing curriculum or expertise programs; c) creating learning situations that are active, interactive, communicative, effective, and fun, as well as effective student guidance. While the weaknesses of pedagogic competencies possessed by mathematics education students in the microteaching course are as many as five indicators: a) mastering learning theory and learning principles; b) mastering theories, principles, and learning strategies; c) mastering the use of media, communication technology, and information, as well as reflective actions to improve the quality of learning; d) mastering concepts, principles, and learning assessment strategies; e) understanding the process and results and the impact of learning for students.
- 3) Factors that lead to the students' weak pedagogical competence are the lack of motivation of students to improve and develop their pedagogical abilities and the lack of tasks or exercises undertaken by students in developing their pedagogical abilities, students are less able to organize their study time, lack of students' creativity in completing assignments.
- 4) Efforts that can be used as alternative solutions to overcome the weaknesses of students' pedagogical competencies include applying the Lesson Study approach and providing material reinforcement of pedagogic abilities.

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