DESIGN OF COLLABORATIVE AND PARTICIPATORY LEARNING MODELS IN MICROTEACHING COURSE

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ABSTRACT

Higher education performance measured using Indikator Kinerja Utama (IKU). The existence of these indicators will accelerate the transformation of higher education so that it is adaptive and globally competitive. IKU 7 where learning activities in the classroom must implement collaborative and participatory learning. The research objective is to develop a microteaching lesson study course model design that accommodates collaborative and participatory learning. This research is development research using a 4D model consisting of the Define, Design, Develop, Disseminate stages. The research results obtained a validity coefficient of 1.0, including the very high validation category, the development of a valid instrument and can be used in data collection. Microteaching lesson study is a model for improving the quality of prospective teachers by implementing three stages of lesson study (plan, do, see) in learning microteaching courses. To accommodate collaborative and participatory learning in microteaching courses, assignment activities are directed using the case method and Team-Based Project.

Introduction

The Ministry of Education, Culture, Research and Technology through the Directorate General of Higher Education launched Merdeka Belajar Kampus Merseka (MBKM) policy. Higher education performance measured using Indikator Kinerja Utama (IKU) (Kemendikbud, 2021). The existence of this IKU will accelerate the transformation of higher education so that it is adaptive and globally competitive. There are eight IKUs that serve as benchmarks for performance achievements, one of which is IKU 7 where learning activities in the classroom must implement collaborative and participatory learning. Collaborative and Participatory Learning can be implemented using case method and team-based project.

There are several ways to realize collaborative and participatory learning through case solving methods, firstly students become the main figures in solving cases, secondly students are able to carry out analysis on cases to create solutions and recommendations, thirdly there are active discussions in class. Apart from that, through the team-based project learning method, first students work on assignments in groups within a certain period of time, second groups create work plans and collaboration models for problems encountered, third group presentations (Kemendikbud, 2021).

Microteaching is one of the required courses for prospective teacher students. Microteaching was proposed by professor Allen from Stanford University in the 1960s (Allen, 1966). It is a professional training method for student teachers to improve their teaching skills

in a micro environment (Tang et al, 2023). Criteria for teacher professionalism include the ability to master material, manage PBM, classes, media or resources, and master the basics of education (Yusutria, 2017). One of the assessment product instruments that needs to be developed is the basic microteaching skills that must be met and practiced all 8 basic teaching skills (Dewi, 2018). The assessment instrument includes aspects of basic teaching skills, language and evaluation (Hendriyani et al, 2020). The instruments that are often used in microteaching assessments have not yet determined the basic competency of prospective teachers regarding basic teaching skills (Aprilia et al, 2014).

In microteaching activities, it is necessary to design learning strategies that are able to improve students' pedagogical competence and prioritize student-centered learning (Lathifah et al, 2021). Students participating in microteaching courses have difficulty connecting one concept with another (Mitasari, 2023). Based on the results of observations in microteaching classes, information was found that students tend to work independently so they often have difficulty to create learning design. The learning design that are prepared are still simple, if they develop a learning design with a team, it is hoped that it can enrich learning activities, both in the selection of media, models, methods, strategies and assessment techniques. Based on these problems, it is necessary to develop a microteaching model design that can accommodate participatory and collaborative activities.

The lesson study applied in the training aims to improve students' teaching experience and make it more meaningful through improving teaching techniques. In addition, this approach provides students with the opportunity to collaborate with the team involved during teaching practice, teachers and lecturers. The integration of lesson study in microteaching classes is possible and should be used by student teachers regularly.

Microteaching lesson study is a model for improving the quality of prospective teachers by applying several elements of microteaching and lesson study. Microteaching lesson study is implemented through three stages, namely plan, do, see. At the plan stage, students in groups plan learning together. At this stage they share knowledge and ideas, improve their lesson plans, collaborate in preparing lesson designs, and prepare assessments. In the do stage, the model teacher conducts the lesson while other group members observe the lesson. The see stage is the final stage which provides positive feedback to the model teacher to improve lessons (Utami, 2016). Collaboration of the lesson study team which includes students, teachers and lecturers provides benefits in professional development. This collaboration includes aspects of being able to work with other people, investigative abilities, contributions and problem solving abilities (Istikomayanti et al., 2024).

The aim of this research is to develop a microteaching lesson study course model design that accommodates collaborative and participatory learning.

Methods

This type of research is development research using the 4D development model which includes the Define, Design, Develop, Disseminate stages (Thiagarajan et al, 1974). At the define stage, a needs analysis of the microteaching lesson study model is carried out. At the design stage, a microteaching lesson study model design was prepared. At the development stage, the microteaching model design is validated with expert validators and also revised if necessary. At the disseminate stage, the microteaching lesson study model was implemented which accommodates collaborative and participatory learning in microteaching courses for 5th semester students of the Tribhuwana Tunggadewi University, Biology Education study program.

The data in this research is in the form of data from instrument validation by two validators who are experts in learning design and assessment. Next, the data was analyzed descriptively qualitatively by determining the validation coefficient using the Gregory index (Gregory, 2013). The following is Gregory's validity test formula below.

Table 1. Gregory's Validity Test Formula

Cross tabulation		Validator 1	
		Less relevant (skor 1-2)	Very relevant (skor 3-4)
Validator 2	Less relevant (skor 1-2)	Weak (A)	Strong-weak (B)
	Very relevant (skor 3-4)	Weak-strong (C)	Strong (D)

Content validity coefficient formula

$$x = \frac{D}{A + B + C + D}$$

Table 2. Validation Test Criteria

No	Value Range	Criteria
1	0.8 - 1	Very high validity
2	0.6 - 0.79	high validity
3	0.4 - 0.59	Validitas sedang
4	0.2 – 0.39	Low validity
5	0.0 – 0.19	Very Low validity

Results and Discussion

This research is to develop microteaching lesson study model which implements problem-solving learning methods. The problem-solving approach in this research is to include case-based and team-based project learning methods in microteaching lesson study to accommodate participatory and collaborative learning. The emphasis on case method and team-based project learning models is used in preparing the learning design for microteaching courses. Case method activities are carried out by students observing learning at school so that students can then provide solutions to problems in the very diverse class. Team-based project activities are carried out with students given projects to develop innovative learning designs to improve student learning processes and outcomes in class. In its implementation, students collaborate in groups by carrying out plan, do, and see which are the main characteristics of lesson study activities.

The data for this research are the results of the instrument validation assessment by two validators. The following is Table 1 of the results of the validator instrument assessment.

Table 3. Instrument Assessment Results by Validator

No	Assessment Aspect	Validator		Relevance
		1	2	
1	Suitability of indicators to observed aspects	3	3	D
2	Success indicators describe skills in learning design	4	4	D
3	Success indicators describe skills in implementing learning	4	4	D
4	The observed aspects accommodate participatory collaborative learning	4	4	D

5	The observed aspects are formulated clearly	4	4	D
6	Observed aspects can be seen from observations	3	4	D
7	The observed aspects do not give rise to double/ambiguous meanings.	4	4	D

Based on the assessment results table, all aspects of the assessment are included in the relevance category D (strong). The following is the assessment contingency table from the two validators.

Tabel 4. Validator Assessment Results

Cross tabulation		Validator 1	
		Weak	**Strong**
Validator 2	Weak	0	0
	Strong	0	7

Content validity coefficient formula:

$$x = \frac{validator\ score}{total\ score}$$
$$x = \frac{7}{0 + 0 + 0 + 7}$$
$$x = \frac{7}{7}$$
$$x = 1$$

Based on the calculation results, the validity coefficient is 1.0, including the very high validation category. This means that the instrument development is valid and can be used in data collection.

Collaborative and Participatory Learning Forms

Collaborative learning is a learning method that focuses on cooperation between students in one group. Each group discusses to determine their own work procedures, time and place for group work discussions, case identification steps, ways to resolve problems and proposed solutions. Participatory learning is an effort to include students in learning activities. Student participation in learning can be included in the three stages of learning activities, namely planning, implementing and assessing learning activities.

Forms of collaborative and participatory learning are case method and team-based project. Case method learning is a learning method that involves students in solving real-life problems to improve students' ability to solve problems as a basis for decision making. Several types of cases that can be raised include theoretical or conceptual problems that require problem analysis for decision making (Kemendikbudristek, 2021).

Project-based learning is an innovative learning method that involves students' active role in complex activities. Project-based learning can facilitate students to work on projects that have been designed systematically, demonstrate performance and be accountable for the results of group work. Learning activities take the form of designing a project systematically so that students learn aspects of knowledge and skills through a structured inquiry process. One of the determinants of the success of project-based learning is that students have good initial knowledge.

Microteaching Lesson Study Learning Design Model

Microteaching lesson study is a model for improving the quality of prospective teachers by applying several elements of microteaching and lesson study. Microteaching lesson study is

implemented through three stages, namely plan, do, see. At the plan stage, students in groups plan learning together. At this stage they share knowledge and ideas, improve their lesson plans, collaborate in preparing lesson designs, and prepare assessments. In the do stage, the model teacher conducts the lesson while other group members observe the lesson. The see stage is the final stage that provides positive feedback to the model teacher to improve lessons. Lesson study in microteaching can improve the ability of prospective teacher students to carry out assessments based on lesson plans, learning approaches, and student attitudes (Iksan et al., 2013). Lesson study can facilitate the development of students' critical, creative and innovative thinking skills in designing learning (Deswita, 2019).

The collaboration of the lesson study team which includes students, teachers and lecturers provides benefits in professional development. This collaboration includes aspects of being able to work with other people, investigative abilities, contributions and problem solving bilities. Microteaching lesson study consists of three stages, namely (1) preparation stage, forming students in small teams, (2) implementation stage, carried out by making a plan (plan), (3) implementation (do), (4) reflection stage (see), and (4) evaluation stage (Suhaedi & Harahap, 2018; Astutiningtyas et al., 2021).
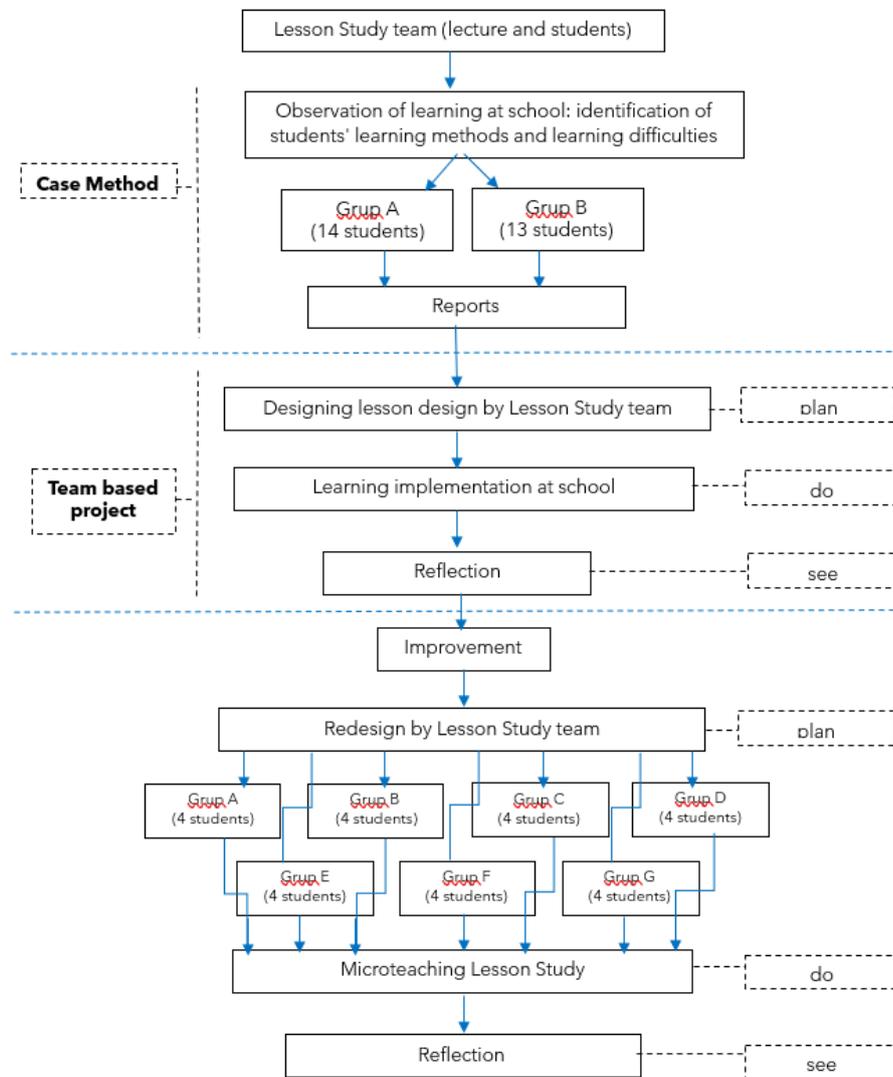

Figure 1. Design Of A Microteaching Lesson Study Model To Accommodate Participatory Collaborative Learning

Case method and team-based project learning models are used in preparing the learning design for microteaching lesson study courses. Case-based activities are carried out with students observing learning in partner classes so that students can then provide solutions to problems in the very diverse class. Team-based project activities are carried out with students given projects to develop innovative learning designs to improve student learning processes and outcomes in class. In its implementation, students collaborate in groups by carrying out plan, do, and see which are the main characteristics of lesson study activities. The application of lesson study can increase the competency of prospective teacher students in preparing learning plans and evaluating them (Vitantri & Asriningsih, 2016).

The following are the stages in implementing the case method and team-based project, (1) The class is divided into two or more large groups to work on the task as a team for a specified period of time, (2) The group observes learning at school and is then given the opportunity to design a work plan and collaboration model, (3) Each group presents a lesson design or learning plan as a solution to problems in the class. Group presentations in front of the lecturer, class and team of teachers at the school so that they can provide constructive feedback, and (4) The lecturer facilitates and monitors the progress of the lesson design being prepared which will then be implemented in the class. One student act as a model teacher and other group members and lecturers act as observers.

Conclusion

Based on the research results, a validity coefficient of 1.0 was obtained, including the very high validation category. This means that the instrument development is valid and can be used in data collection. Microteaching lesson study is a model for improving the quality of prospective teachers by implementing three stages of lesson study (plan, do, see) in learning microteaching courses. To accommodate collaborative and participatory learning in microteaching courses, assignment activities are directed using the case method and team-based project.

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