

# Laboratory Development Design for Microteaching Learning for Physical Education Students, Faculty of Sport Science, Universitas Negeri Semarang

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## Abstract

The Microteaching Laboratory is a supporter of improving pedagogical competence. The existence of the Microteaching Laboratory is essential because it provides a place for students to find out the description of learning in class later. Conducive laboratory conditions are needed and meet the needs of microlearning practice standards in the Microteaching Laboratory of Physical Education Department, Sports Faculty, Universitas Negeri Semarang. The development is carried out with the initial stage, namely the Microteaching Laboratory multimedia room design. The design is made through a Discussion Forum with Learning Experts and media experts and suggestions from students as users. Based on the results of the Discussion Forum conducted, a design form is agreed to be the microteaching laboratory that can be used for theoretical learning, practical learning, and outdoor learning that is connected with lecturers and observers in the room with the help of multimedia equipment. The role of multimedia equipment that connects the outdoor class and indoor class makes it easier for observers and lecturers to make observations and assessments and provide evaluations to students practicing. A follow-up to the design that has been designed to create a good and conducive Microteaching Laboratory to achieve the goals of Microlearning in Physical Education Department UNNES students is needed.

**Keyword:** microteaching laboratory, physical education, teacher

## INTRODUCTION

The Physical Education (PE), following Indonesian Law no. 20 of 2003 concerning the National Education System in Chap. 1, the PE is a comprehensive part of education (Peraturan Pemerintah RI, 2003). It is a physical exercise that is utilized in education. It aims to develop aspects of physical fitness, movement skills, critical thinking skills, social skills, reasoning, stability, emotional, moral action, parts of a healthy lifestyle, and introduction to a clean environment through physical activities, sports, and health that are planned systematically to achieve the national education goals (Anisa Herdiyana, 2016; Ohman, M., Redelius, K., & Quennerstedt, 2015).

Department of Physical Education (PE) is the institute that shapes prospective teachers of Physical Education for Elementary School, Junior High School, and Senior High School. Besides shaping a candidate for Physical Education teacher, it also has a mission to improve professional human resources in Physical Education. In efforts to achieve the Vision and Mission, the role of its facilities and infrastructure is critical (UNNES, 2020).

To be a good Physical Education teacher, a person must possess four teacher competencies according to Law Number 14 of 2005 concerning Teachers and Lecturers (PP RI, 2005). It stated that "Teacher competencies as referred to in Article 8 include pedagogic, personality, social, and professional competencies obtained through professional education". In mastering physical education teacher competencies, Physical Education Department indeed conducts lectures according to the student needs and follows the applicable curriculum. In addition, the fulfillment facilities and infrastructure supporting the course are also always completed so that lessons can be run by the lecturers and students smoothly and an easier way to achieve learning and competency mastery.

The main pillars in preparing competent and professional educators are having superior human resources, a standard curriculum, good libraries, and laboratories by the demands of graduate competence. The standard facilities and infrastructure will affect the process of the lectures. One of the facilities that play an essential role is the availability of a microteaching laboratory (Bartley, 1972; Kpanja, 2001; "Microteaching: An Innovative Laboratory Procedure," 1970; Warner, 1980).

According to Kpanja (2001), a laboratory is a place where experiments and investigations are carried out. In a narrow sense, it is often defined as a room or a place in the form of buildings bounded by walls and a roof in which there are several lab tools and materials (Abakay et al., 2016).

A microteaching laboratory is one of the laboratories owned by the Faculty of Sports Science (FIK), Universitas Negeri Semarang (UNNES). It focuses on education in the form of learning practices to improve the pedagogical abilities of students majoring in Physical Education FIK UNNES. Apart from being a means of lectures, it can also be used as a research place for lecturers and students. The courses which can use the microteaching lab are Microteaching, Physical Education Learning Strategy, Physical Education Learning Evaluation, Curriculum Development, and Lesson Planning. The lecturers of those courses will be maximal if they are supported by facilities and laboratory microteaching learning media, which are complete and by their needs.

Considering the positive reflections of the qualified teachers on student achievement in qualified education, many reforming movements intended for both teacher training system and teaching processes have been developed periodically in the last century (Leslie E. Lukin, Deborah L. Bandalos, Teresa J. Eckhout, 2005). For a successful teacher-training program, providing pre-service teachers with effective learning and teaching tactics and experiences should be the objective (Ismail, 2011). In terms of this objective, the purpose of microteaching practices can be defined as encouraging prospective teachers in the classroom about their attitudes and skills (Şen, 2010). The main objective of microteaching practices used in the classroom is providing pre-service teachers with the important knowledge, skills, and behaviors before they start their service. The purpose of microteaching is making pre-service teachers bring their knowledge and skills to bear, have experience, develop their research skills, increase their self-confidence, decrease their anxiety, and make self-assessment (Galanouli et al., 2004).

The facilities and room conditions owned by the microteaching laboratory are currently lacking. Poor lighting, lacking media and sound system control room, unmaximized temperature regulator, limited electrical terminals, inappropriate number of chairs and desks, the whiteboard, and the noise-canceling that is not following the needs will significantly affect the lectures and academic activities conducted in the microteaching laboratory. A laboratory development is needed to be undertaken through making a design to suit the needs of a standard microteaching laboratory to facilitate the lectures for achieving a conducive learning and students' pedagogical aspect as a prospective Physical Education teacher. Then, how is the design of a good microteaching laboratory development to support the achievement of microlearning objectives and increase pedagogical competence?

## METHODS

This research was a Research and Development (R&D) research. This research would make a product, namely the design of a microteaching Laboratory, Department of Physical Education, Health and Recreation.

The research instrument was a questionnaire distributed to multimedia experts, learning experts, and students using the Google form.

The research analysis used descriptive statistical methods. It used the statistics data to analyze data to describe or depict the data that has been collected as it was, without any intention to make a conclusion that applied to the public or generalist.

## RESULT AND DISCUSSION

The results of the research obtained the data presented as follows:

### A. Development Stages of Physical Education Digital Microteaching Laboratory Prototype

There are two stages carried out in this development. The first is a questionnaire distributed using Google Drive to multimedia experts, learning experts, and students under the interview guide,

#### 1. Multimedia Experts

The multimedia experts provide a lot of input, emphasizing innovations in making the Physical Education Digital Microteaching Laboratory Prototype directed towards audio-visuals that can be used easily/portable. Using a clip-on on student practitioners outside the room combined with a wireless sound system connected to the learning room will make practical observations by lecturers and other fellow students more manageable and more detailed. The installation of speakers and cameras in every corner of the room supports the audio-visual relationship in the laboratory. The design of the room is also made brighter with maximum lighting and soundproofing. Another essential piece of advice is the availability of an internet connection. With a stable and robust internet connection, the laboratory design is expected to connect learning between outdoor learning and indoor observers.

The microteaching laboratory design is also equipped with a multimedia control room with audio and visual controls so that multimedia facilities can be managed through it. For the multimedia control, it is recommended to be equipped with a PC and sound mixer to adjust the images and sounds produced in the learning process to make high-quality images and sounds. A camera with a good pixel resolution is also recommended.

The selection of furniture in the video design in the form of a folding table is considered to facilitate the space transition to be more flexible and by multimedia needs. In addition, the camera placement on the design video is suitable for capturing images of practitioners from all sides. It will also facilitate the lecturers and students to make observations. The placement of the loudspeaker in the design video is appropriate, namely by placing it in the upper corner of the room.

Figure 1. Prototype Design of Microteaching Laboratory



Figure 2. Prototype Design of Outdoor and Indoor Physical Education Microteaching Laboratory



#### 2. Learning Experts

The learning experts responded to the design video by emphasizing microlearning's effectiveness, such as the microteaching laboratory's supporting means of student knowledge and skills improvement. It also facilitates observation and assessment and achieves the goal of mastering student pedagogical abilities.

In this study, two competent Physical Education learning experts provided input on the design video for the microteaching laboratory. Both learning experts gave a positive response to the microteaching laboratory design video. The facilities and infrastructure that appear in the video are considered suitable for the needs of microlearning. The existence of an observation room is also considered to help lecturers observe practitioners more comfortably and clearly.

The choice of a folding table design will increase the room's usability when there is a need for a more expansive space. Based on that, the benefit of the microteaching laboratory space is a place for theoretical learning and can also be used for practical learning in a small scope. In addition, the application of a soundproof room is expected to be realized in this design of microteaching laboratory development.

Based on the laboratory design video, the aspect of a learning platform that connects outdoor and indoor learning is something new and positive. From this design, the practitioners in outdoor learning can be observed by lecturers and observers from inside the room comfortably and with more detail with the help of audio-visual support equipment and a stable and strong internet signal. A laboratory design video is a form of integration of theory and practice learning to meet the needs of microlearning.

The design of a microteaching laboratory is expected to support increased knowledge and skills and the pedagogical competence of students, accompanied by the completeness and sophistication of infrastructure facilities.

### 3. Students

As users of the microteaching laboratory, students provide feedback about the desired laboratory conditions according to microlearning needs.

Student responses related to the microteaching laboratory design video welcome and hope that the design can be realized as a form of betterment to improve the quality of Physical Education Department FIK UNNES. The concept of integrating outdoor learning and indoor observations will give the observer more value because the observations will be more detailed with the help of multimedia equipment that does not require the observer to be outside the room. It is different from the previous one. They had to be outside together with the practitioner, who was sometimes less than optimal because the observers and lecturers did not hear the practitioner's voice. The laboratory designs and concepts are considered to provide comfort for observers and practitioners because they are supported by more sophisticated rooms and equipment that are expected to help the students achieve microlearning goals and improve their pedagogical competencies.

## CONCLUSSION

Based on the results and discussion above, the design of the microteaching laboratory development is good for the application of multimedia facilities that integrate outdoor and indoor learning to facilitate observations and provide feedback from observers and lecturers to student practitioners, the selection of portable learning facilities and infrastructure design as needed to suit the needs of practical and theoretical indoor learning spaces, the fulfillment of room support facilities such as lighting, soundproofing, and air conditioning, as well as stable and robust internet access.

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